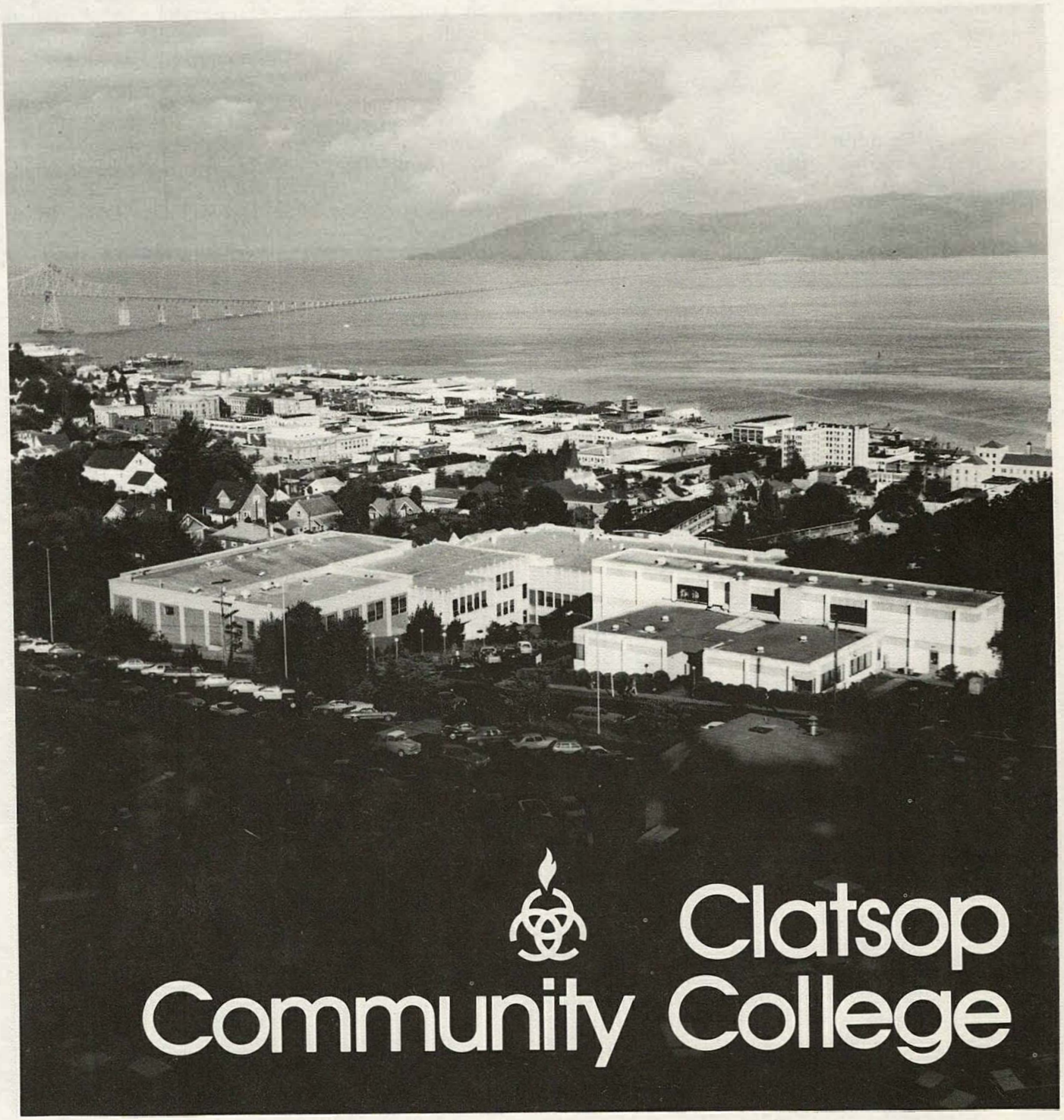

1981-82 General Catalog

BOARD OF DIRECTORS

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Clatsop Community College is a public, two-year coeducational institution, offering instruction and training in liberal arts and sciences, vocational-technical fields, adult and community education, special education and general education.

The general catalog is published annually, for information purposes. Copies may be obtained free of charge. Mail requests to the Office of Admissions and Records, Clatsop Community College, Astoria, Oregon, 97103. The 1982-83 catalog will be published in May, 1982.

Clatsop Community College subscribes to the terms of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Federal Executive Orders No. 11375 and 11246, as well as laws of the State of Oregon pertaining to affirmative action. Equal employment opportunity and treatment shall be provided in hiring, retention, transfer, promotion, and training of all employees, and equal educational opportunities shall be afforded all students regardless of age, handicap, national origin, race, religion or sex. Continuous effort will be devoted to the improvement of human relationships and to the elimination of conditions from which discrimination results.

Every effort is made to ensure catalog accuracy at the time of publication. However, the provisions of the catalog are not to be regarded as an irrevocable contract between the student and the College. The College reserves the right to change any provision or requirement at any time within the student's term of registration. The College further reserves the right to withdraw a student from a class, deny enrollment in a class, or demand full withdrawal of a student from all classes for cause, using due process.

Address for all College offices:
Clatsop Community College,
Astoria, Oregon 97103
Telephone (College information):
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General Information

Philosophy, History, Location, Accreditation, Curricula

PHILOSOPHY

Clatsop Community College is a public institution dedicated to serving as a center of learning, information and culture for Clatsop County and surrounding areas. It is committed to recognizing and serving those particular needs which can be uniquely met by an Oregon Community College.

The College staff is dedicated to learning, and is primarily concerned with that kind of teaching which will best promote the learning process. We recognize many different levels of maturity, capabilities, interests and skills. We accept responsibility for offering help to every student pursuing the realization of his or her own potential, regardless of background. We recognize that all programs are of equal importance, irrespective of individual student objectives.

We believe that the College should accept as a student any person who may be able to benefit from our programs.

We believe that learning takes place through the active processes of thinking, feeling and doing, and that the learning process includes development of both skills and a desire for learning.

We believe that assessment and evaluation are important components of the educational enterprise.

We believe that close student-faculty relationships contribute to learning and to a favorable working atmosphere.

We believe that the College should provide for experiences which help the student develop a sense of responsibility to self and society.

Specific assumptions relating to our philosophical statements are:

—Significant learning takes place when the subject matter is perceived by the student as having personal relevance.
—Education should be an exciting, creative and rewarding experience for students and teachers alike.
—Experimentation and innovation, properly evaluated, are necessary ingredients in the educational process.

The function of Clatsop Community College is to serve as a community center to promote the fullest development of human potential by providing services and resources which:

—Help the student find ways of meeting the demands of a rapidly changing society;
—Stimulate a desire for knowledge and teach methods for acquiring that knowledge;
—Develop interpersonal, educational and social skills;
—Address those personal circumstances which may interfere with a person's ability to seek or receive the benefits of instruction.

The College is committed to the following specific educational functions:

—To provide up to two full academic years of lower division instruction which can be transferred to a senior college or university;
—To provide instructional courses and programs leading to vocational, social and personal competence;
—To provide opportunities for enrollment in classes, workshops and seminars which offer avocational as well as vocational benefits.

HISTORY

Clatsop Community College was founded in 1958 by the Education Board of the Astoria School District. In August of that year, the Education Board established a program of post-high school and adult education for Clatsop County. The first courses were held in the evenings in the Astoria High School.

In 1962 a large majority of Clatsop County voters expanded the concept of the College by making it responsive to an "Area Education District," which included all of Clatsop County. The first elected Board of Directors of Clatsop Community College assumed control of the operation of the College on July 1, 1962.

Since that time, Clatsop Community College has become accredited, has acquired and expanded its own campus, has developed day and evening courses in many fields and has grown to an enrollment of more than 800 full-time students each year and 6,500 part-time students.

There are presently seven buildings on the main campus. They house a student center, a library, an automotive laboratory, liberal arts classrooms and laboratories, vocational-technical facilities, and administrative offices. The Art Center, dedicated this year, is the campus's newest addition, serving creative arts classes. In addition to its main campus facilities, the College has a performing arts center, a child care center, a waterfront marine training facility, and a 110-acre farm. The farm includes a 30-acre forestry land laboratory.

LOCATION

Overlooking the Columbia River near its juncture with the Pacific Ocean, Clatsop Community

College is located at 16th and Jerome Streets in Astoria, Oregon. The city, with a population of about 11,000, is the county seat of Clatsop County, where the chief industries are forestry, fishing, and tourism. Clatsop County, which makes up the College District, records a population of about 30,000.

Northwest Oregon is the oldest historical section of the state and boasts a century and a half of colorful history in which explorers, fur traders, fishermen and lumbermen played active roles. Seagoing traders visited the Columbia River soon after the United States became a nation. The city of Astoria had its beginnings as a John Jacob Astor fur trading post in 1811, only five years after Lewis and Clark explored the area.

The region today retains much of the picturesque beauty that inspired Oregon pioneers. Lush forests of Douglas Fir and Western Hemlock carpet the mountains of the Coast Range east of Astoria. Coastal streams, lakes and waterfalls bearing names of early explorers run crystal clear into the vast Pacific, fed by an annual rainfall of about 68 inches.

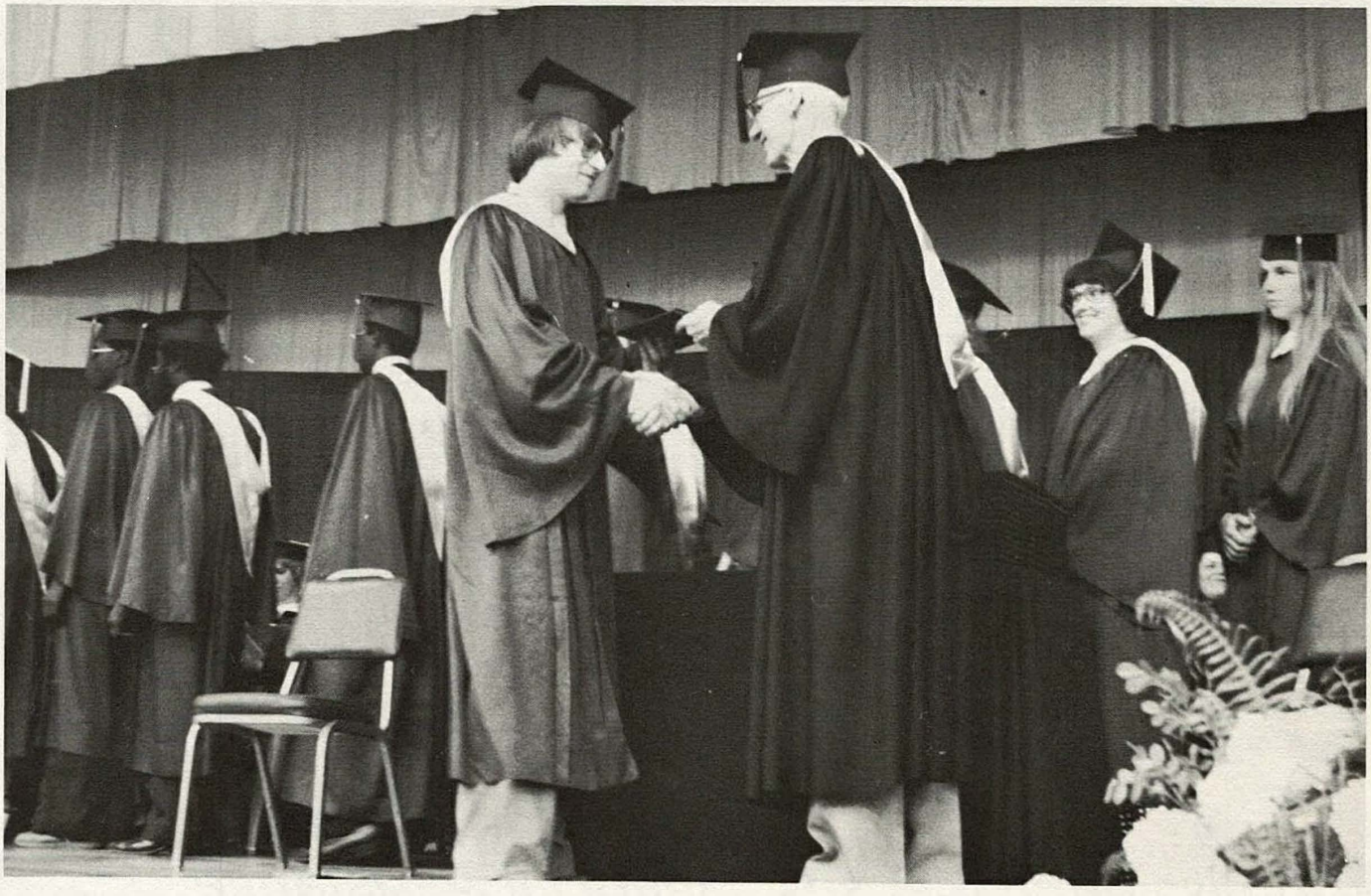
In Astoria, Victorian-era homes and the activity on the river are reminiscent of days when "tall ships," steamers and paddle wheelers made their way up and down the Columbia.

ACCREDITATION

Clatsop Community College is accredited by the Northwest Association of Secondary and Higher Schools. This accreditation assures Clatsop Community College students that their work will receive appropriate recognition from prospective employers and other colleges and institutions.

CURRICULA

The College offers courses and programs in many fields designed to meet various student needs. Lower division collegiate courses are offered in sufficient variety to provide students with their first two years of study in most transfer curricula recommended by the Oregon State System of Higher Education. Numerous vocational-technical programs provide specialized training for specific occupations. Many general interest courses are available which lead to a broad, well-rounded educational background for continued educational growth. The College offers the Associate in Arts, the Associate in Science, and the Associate in General Studies degrees.



Admission & Costs

Admission, Expenses, Financial Assistance

ADMISSION

Clatsop Community College accepts any student who is able to benefit from the instruction. Ability to benefit from the instruction offered may be established through an evaluation of previous education, work experience and appropriate testing.

REGULAR STUDENTS

Any person may be officially admitted to the College as a regular student who has submitted a completed application form and who is:

(a) A high school graduate, or

(b) At least 18 years of age and able to benefit from the instruction offered.

In addition, regular students who are degree candidates, or full-time (12 credits or more) students must have records of previous studies sent to the Office of Admissions. Students whose high school or college transcripts do not provide information needed for appropriate course placement are required to take locally administered placement examinations.

Entrance examinations are not required for admission to the College, but scores from such tests may be submitted in lieu of high school transcripts by individuals who have been out of high school for five or more years.

Acceptance to the College as a regular student normally implies acceptance into any of the degree programs offered by the College. However, some programs accommodate only a limited number of students. Acceptance into these programs is on a "first come, first served" basis.

SPECIAL STUDENTS

High school-aged students may be admitted as special students as follows:

(a) Individuals may be admitted to the College who are 16 or 17 years of age; who have been recommended and released by the appropriate school district; and who have completed standard admission requirements.

(b) Students may participate in a simultaneous enrollment program coordinated with local high schools. This program permits a student to take courses at the College which will count toward high school graduation, as well as toward a future college degree.

PART-TIME STUDENTS

No formal admission is required for students enrolling in fewer than 12 credits. Students may register for these classes according to the announced registration schedule. Students wishing to be considered degree candidates must meet admission requirements for regular students.

SUMMER STUDENTS

The only requirement for admission to summer session is the ability to benefit from the instruction offered. Persons who wish to earn degrees and those who expect to attend subsequent sessions must meet standard admission requirements.

APPRENTICESHIP STUDENTS

Anyone wishing to enroll in apprentice classes must first be cleared by the appropriate apprenticeship or trade committee. More detailed information may be obtained by contacting the Director of Adult and Community Education or an Oregon State Employment Office.

TRANSFER STUDENTS

Transfer students must present official transcripts of all prior college work.

Transfer credit for work done in non-accredited collegiate institutions may not be granted at time of admission. However, such transfer credit may be obtained upon petition to the Academic Council, or after the student has demonstrated the ability to perform satisfactorily at the college level.

Students are permitted to transfer upper division credits to Clatsop Community College to meet group and elective requirements when it is determined by the Director of Admissions and Records that the upper division course content is essentially equivalent to Clatsop Community College course content.

INTERNATIONAL STUDENTS

An international student interested in admission to the College should send a letter of inquiry to the Director of Admissions. The Director will respond with specific instructions, including an estimate of student expenses for the year. Applicants will be asked to provide scores of 520 or higher on the TOEFL (Test of English as a Foreign Language), or 80 or above on the Michigan Test of English Proficiency. They will also be asked to submit one year's tuition before final papers for immigration and college admission are issued.

EXPENSES

TUITION

Payment of the stipulated tuition and fees entitles each student, full-time or part-time, to all services maintained by the College for the benefit of students. Such services include use of the library, bookstore and cafeteria, use of lab and course equipment in connection with courses enrolled in, admission to special events sponsored by the College, and membership in Associated Student Body, Inc. There is no reduction in fees for students who do not intend to avail themselves of these services.

Tuition is charged by the credit hour, to a maximum of 12 credits, according to the student's residence category. Except for special offerings so listed in the term class schedule, the following rates apply:

In-district residents pay $13 per credit hour to a maximum of $156 per term.

Out-of-district residents pay $19 per credit hour to a maximum of $228 per term.

Out-of-state residents pay $50 per credit hour to a maximum of $600 per term.

Minimum tuition is $25 per term.

Tuition and fees are payable in full at the time of registration. Students enrolling for six credit hours or more may register with a down payment of 70% of tuition and fees by contract arrangement with the Business Office.

RESIDENCE DEFINED

Categories of residence for tuition rate purposes are defined as follows:

In-district residents. Students who have lived in Oregon for the ninety consecutive days and in Clatsop County for the thirty consecutive days prior to the first instructional day of the term for which they are registering, and veterans detached from active military service within twelve months of registering, pay in-district rates.

Out-of-district residents. Students who have lived in Oregon, outside of Clatsop County, for the ninety consecutive days prior to the first instructional day of the term for which they are registering, and residents of Naselle or Ilwaco school districts, or of Wahkiakum County, Washington, pay out-of-district rates.

Out-of-state residents. Students who have lived outside the State of Oregon for the ninety consecutive days prior to the first instructional day of the term for which they are registering, and foreign students who have not entered this country as immigrants, pay out-of-state rates.

FEES

Laboratory fees or other special fees are charged for certain classes in which additional costs are incurred for materials, supplies, tools or equipment. Such fees are listed regularly in the term class schedule.

Late fees. A late registration fee of $5 is assessed after the third Friday of a term. A $1 fee is charged for each add slip submitted after the third Friday of a term.

Transcript requests. A student is entitled to five free copies of his or her transcript. After the first five copies, each subsequent copy requires payment of a $1 fee.

REFUNDS

Students who withdraw from a course or courses, and who comply with all regulations concerning withdrawals, are entitled to two-thirds tuition refund if the withdrawal is made by the end of the third week of classes. No refunds are allowed after the third week.

In all cases, refunds are calculated from the date of application for a refund and not from the last date of class attendance. Refunds are based on the amount of tuition paid.

Full refund of tuition paid for a class is granted if the class is canceled by the College, except where the student continues to be enrolled in 12 or more credit hours after cancellation of the class.

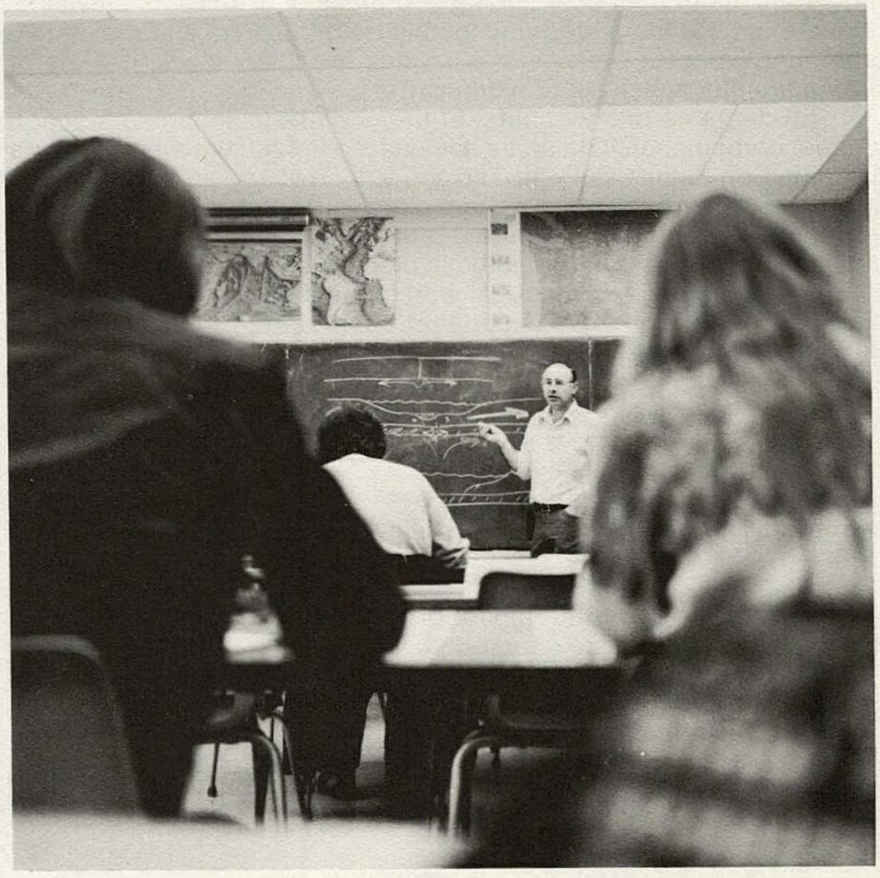
TRAVEL ALLOWANCE

Reimbursements. The College will pay two cents per mile, round trip, to students who live in the College District, but beyond a 20-road-mile radius. Reimbursement is paid only for that mileage beyond the 20-mile limit, and is paid at the end of the school year whether the student resides at his legal residence or not. In no case will reimbursement exceed 80% of the total tuition paid.

To be eligible a student must: (1) complete at least 12 credits each term for three consecutive terms, (2) maintain a 2.00 G.P.A. for the three term period, (3) have all tuition and fees paid to the College.

FINANCIAL ASSISTANCE

Believing that no one should be barred from access to higher learning for financial reasons, the College administers a substantial program of financial aid, including emergency loans, for students who have difficulty meeting all or a part of their expenses while enrolled in college. For more complete information and ways to apply for financial aid, please refer to page 86.



Lower Division Liberal Arts & Sciences

Minimum Requirements, Transfer Curricula, Program Descriptions

The Division of Liberal Arts and Sciences offers courses designed to broaden the creative and critical knowledge of interested students. These courses are basic to self-understanding, society, and nature. They parallel freshman and sophomore courses offered by major universities and four-year colleges. For students uncertain about their educational or professional goals, the lower division program offers the opportunity to explore several fields of study to help determine special interests and aptitudes. For students who plan to complete work for a bachelor's degree, the lower division years provide a broad general education and a foundation for specialization during the junior and senior years.

Students normally transfer at the end of the sophomore year to upper division (junior) standing at the school of their choice. In some specialized fields, however, students should plan to transfer after one year at Clatsop Community College. The assistance of advisers will be helpful in making this determination.

The College grants the Associate in Arts and the Associate in General Studies degrees to those students who (1) have completed either required curriculum, (2) have been recommended by the Academic Council, and (3) have participated in graduation ceremonies (unless excused).

Students desiring practical work experience for elective credit in the area of their major may enroll in SFE 280 Supervised Field Experience according to a prearranged training plan. Training agreements may be obtained from the Career Planning and Employment Office.

MINIMUM REQUIREMENTS
ASSOCIATE IN ARTS

1. Ninety credits minimum of approved lower division collegiate courses.*
2. Cumulative grade point average of 2.00 or above for all college level work.**
3. English Composition, Wr 121, 122: six credits.
4. Personal Health, HE 250.
5. Physical Education PE 185: five credits***
6. A year sequence in each of three groups: the Humanities group, the Mathematics-Science group, and the Social Science Group. These sequences must be from the approved list of survey courses on page 11.
7. An additional year sequence, numbered 200 or above, in one of the three groups. This sequence must also be from the approved list of survey courses on page 11.
8. At least one literature sequence must be completed. This may satisfy either the Humanities group requirement or (if numbered 200 or above) the second year sequence requirement in the Humanities group.
9. If the second year sequence is in either the Mathematics-Science group or the Social Science group, course numbers for the second year sequence must have a prefix different from that of the first year sequence.
10. Attendance at Clatsop Community College at least two terms (including the last term before the Associate in Arts degree is awarded) and completion of 24 credits at Clatsop Community College.
11. Student may apply a maximum of 24 credits of "pass" grades toward an Associate Degree at Clatsop Community College.

*Approved courses include all lower division collegiate courses numbered 50 or above.

**Includes transferred credits taken at other colleges and universities that apply toward a Clatsop Community College degree.

***Two different physical education activities are permitted per term, provided that beginning, intermediate, or advanced courses in the same activity are not taken simultaneously. The physical education requirement may be waived upon application to the physical education department if the student (a) is over 21 years of age, (b) is a military veteran with at least 120 days of service, or (c) is physically disabled.

MINIMUM REQUIREMENTS
ASSOCIATE IN GENERAL STUDIES

1. Ninety credits minimum of approved course work.*
2. Cumulative grade point average of 2.00 or above for all college level work.**
3. Six credits minimum of communications courses as listed on page 29.
4. Six credits minimum of social science courses as listed on page 29.
5. Six credits minimum of math or science courses as listed on page 29.
6. Attendance at Clatsop Community College at least two terms (including the last term before the Associate in General Studies degree is awarded) and completion of 24 credits at Clatsop Community College.
7. Physical Education. One credit (unless excused) PE 185.***
8. HE 250 Personal Health or HE 252 First Aid/5.213 Advanced First Aid.

Requirements continued on Page 11.

*Approved courses include all Lower Division Collegiate courses, and non-transfer courses numbered 0.500 - 9.999, with exception of 0.745 through 0.764. Courses numbered 0.500 through 0.999 may be used for elective credit only, and no more than 15 credits of such courses may be applied to the Associate in General Studies Degree. Student may apply a maximum of 24 credits of "pass" grades toward an Associate Degree at Clatsop Community College.

**Includes transferred credits taken at other colleges and universities that apply toward a Clatsop Community College degree.

***The physical education requirement may be waived upon application to the physical education department if the student (a) is over 21 years of age, (b) is a military veteran with at least 120 days of service, or (c) is physically disabled.

GROUP REQUIREMENTS

The following sequences are approved for the satisfaction of the sequence requirements listed above. They also may be taken as electives. Only those courses numbered 200 or above may be used to satisfy the second-year sequence requirement. Sequences not listed will not satisfy group requirements. Single courses not taken as part of a sequence will not apply toward group requirements. Courses listed below are described elsewhere in this catalog.

HUMANITIES

	Credits
Art 204, 205, 206 History of Western Art	3 each
*Eng 101, 102, 103 Survey of English Literature	3 each
*Eng 104, 105, 106 Introduction to Literature	3 each
*Eng 107, 108, 109 World Literature	3 each
*Eng 201, 202, 203 Shakespeare	3 each
*Eng 253, 254, 255 Survey of American Literature	3 each
GL 50, 51, 52 First-Year German	4 each
GL 101, 102, 103 Second-Year German	4 each
Mus 111, 112, 113 Music Theory I	4 each
Mus 201,202,203,Introduction to Music and Its Literature	3 each
Mus 211, 212, 213 Music Theory II	4 each
Phl 201, 202, 203 Introduction to Philosophy	3 each
R 201, 202, 203 Great Religions of the World	3 each
RL 50, 51, 52 First-Year French	4 each
RL 60, 61, 62 First-Year Spanish	4 each
RL 101, 102, 103 Second-Year French	4 each
RL 107, 108, 109 Second-Year Spanish	4 each
Sp 111, 112, 113 Fundamentals of Speech	3 each
Wr 241, 242, 243 Introduction to Imaginative Writing	3 each

*Will satisfy the literature sequence requirement.

SCIENCE AND MATHEMATICS

	Credits
Bi 101, 102, 103 General Biology	4 each
Bot 201, 202, 203 General Botany	4 each
Ch 101, 102, 103 General Chemistry	4 each
Ch 104, 105, 106 General Chemistry	5 each
Ch 201, 202, 203 General Chemistry	4 each
G 201, 202, 203 Geology (with G 204, 205, 206 Lab)	4 each
GS 104, 105, 106 Physical Science	4 each
Ph 201, 202, 203 General Physics	4 each
Ph 207, 208, 209 Introductory Classical Physics	4 each
Z 201, 202, 203 General Zoology	4 each

Three mathematics courses from the following list:

	Credits
BA 211, 212, 213 Principles of Accounting I,II,III	3 each
Mth 95 Intermediate Algebra	4 each
Mth 101 College Algebra	4 each
Mth 102 Trigonometry	4 each
Mth 103 Probability and Statistics	4 each
Mth 106 Elementary Calculus	4 each
Mth 161, 162, 163, Mathematics for Business Management and Social Science	4 each
Mth 191, 192, 193 Mathematics for Elementary Teachers	3 each
Mth 200, 201, 202, 203 Calculus with Analytic Geometry	4 each
Mth 233 Introduction to Numerical Computation-FORTRAN	4 each

SOCIAL SCIENCES

	Credits
Anth 101, 102, 103 General Anthropology	3 each
CJ 110, 120, 130 Introduction to Law Enforcement, Judicial Process, Corrections	3 each
Ec 201, 202, 203 Principles of Economics	3 each
Geog 105, 106, 107 Introductory Geography	3 each
Hst 101, 102, 103 History of Western Civilization	3 each
Hst 201, 202, 203 History of the United States	3 each
PS 201, 202, 203 American Governments*	3 each
Psy 201, 202, 203 General Psychology	3 each
Soc 204, 205, 206 General Sociology	3 each
SSc 104, 105, 106 Introduction to Social Science	3 each

*PS 205 International Relations, 4 credits, may be substituted for PS 203.

A general two-year program is outlined here to aid the student in curriculum planning. This is only one possible program, and it may be modified to suit the student's needs, provided that the basic requirements are met. The transfer student desiring a program in a specific field should consult the following pages for the appropriate curriculum.

Freshman Year

	Credits
Year sequence in any one of the three groups	9
Year sequence in another of the three groups	9-15
English Composition (Wr 121, 122)	6
Physical Education (PE 185)	2
Personal Health (HE 250)	3
Electives	13-15
Freshman Year Total	42-48

Sophomore Year

	Credits
Sophomore year sequence (courses 200-299 in one of the groups begun in the freshman year	9-15
Year sequence in the third group	9-15
Physical Education (PE 185)	3
Electives	24-27
Sophomore Year Total	45-51
Two-Year Total	90-99

TRANSFER CURRICULA

The Oregon State System of Higher Education has approved more than sixty transfer programs offered at Clatsop Community College. These programs are described in more detail on the following pages. The length of each program and the Oregon institutions to which they will transfer are also indicated.

TRANSFER PROGRAMS TO OREGON STATE SYSTEM OF HIGHER EDUCATION

Major	Years	UO	OSU	PSU	OCE	EOSC	SOSC	OIT	Page Reference
Administrative Office Management	2		x						16
Agri-Business	2					x			16
Agriculture	2		x						16
American Studies	2		x						16
Anthropology	2	x	x	x		x			17
Architecture (preprofessional)	1	x							17
Art	2	x	x	x	x	x	x		17
Art Education	2	x	x	x	x	x	x		17
Art History	2	x							17
Atmospheric Science	2		x						17
Auto Diesel Technology	2							x	17
Biochemistry, Biophysics	1		x						18
Biology (Botany, Entomology Micro-biology, Zoology)	1	x	x	x	x	x	x		18
Business Administration	2	x	x	x		x	x		18
Business Education	2		x	x		x	x		18
Chemistry	1	x	x	x		x	x		18
Chemistry-Business	1						x		18
Community/Social Service	2			x		x			18
Community Service and Public Affairs	2	x							18
Computer Science	1 or 2	x	x	x					18
Criminal Justice	2			x	x		x		19
Dance	1 or 2	x							19
Dental Hygiene	1 or 2	x						x	19
Dentistry (preprofessional)	1	x	x	x	x	x	x		19
Economics	2	x	x	x	x		x		20
Education (Elementary)	2	x	x	x	x	x	x		20
Education (Secondary)	1 or 2	x	x	x	x	x	x		20
Education (Industrial)	2		x						20
Engineering	2		x						20
Engineering and Applied Science	1			x					20
Engineering Technologies	1 or 2		x						20
English	2	x	x	x	x	x	x		20
Environmental Health Technology	1							x	20
Environmental Technology	2							x	21
Foreign Languages	2	x	x	x	x	x	x		21
Forestry	1		x						21
General Arts and Letters	2	x	x	x	x	x	x		21
General Science	2	x	x	x	x	x	x		21
General Social Science	2		x	x	x	x	x		21
General Studies in the Arts	2				x				21
Geography	2	x	x	x	x		x		21
Geology	2	x	x	x			x		22
Gerontology	2	x							22
Health, Health Education	2	x	x	x	x				22
Health Care Administration	2		x						22
History	2	x	x	x	x	x	x		22
Home Economics	2		x						22
Hotel and Restaurant Management	2		x						22
Industrial Management	2							x	22
Industrial Processes Technology	2							x	23
Interdisciplinary Studies	2				x				23
International Studies	2	x							23
Journalism	2	x							23
Journalism-Technical	1		x						23
Landscape Architecture	1	x	x	x					23
Law (preprofessional)	2	x	x	x	x	x	x		24
Mathematics	1 or 2	x	x	x	x	x	x		24
Medical Technology (pre-professional)	1	x	x	x	x	x	x	x	24
Medicine (preprofessional)	1	x	x	x	x	x	x		24
Music	2	x	x	x	x	x	x		24
Nursing	1	x							24
Pest Management for Plant Protection	2		x						25
Pharmacy (preprofessional)	1		x						25
Philosophy	2	x	x	x					25
Physical Education	2	x	x	x	x	x	x		25
Physical Science Technology	1							x	25
Physics	1 or 2	x	x	x		x	x		25
Political Science	2	x	x	x			x		25
Psychology	2	x	x	x	x	x	x		25
Recreation Management	1 or 2	x	x						26
Religious Studies	2	x	x						26
Sociology	2	x	x	x		x	x		26
Speech	2	x	x	x			x		26
Theatre	1 or 2	x	x	x			x		26
Veterinary Medicine (preprofessional)	1	x	x	x	x	x	x		26

OREGON STATE SYSTEM TRANSFER REQUIREMENTS

General degree requirements listed below are derived from the catalogs of the Oregon State System of Higher Education four-year institutions and are subject to change. Certain preprofessional and professional degrees have special requirements beyond those shown below. Students should be aware that not all Clatsop Community College courses in a subject area will necessarily apply toward a given transfer requirement. Academic advisers will help determine proper courses for a transfer program.

Group requirements for State System institutions are not necessarily equivalent to group requirements for an associate degree at Clatsop Community College (refer to page 10).

The State System's six colleges and universities will accept a maximum of 108 quarter credit hours of college transfer work completed at an Oregon community college. Some institutions limit work transferred from a community college to the **first** 108 quarter hours of work completed toward baccalaureate degree requirements.

FOR STUDENTS PLANNING TRANSFER TO THE *UNIVERSITY OF OREGON.* REQUIRED COURSES FOR ALL BACCALAUREATE DEGREES

GENERAL REQUIREMENTS — **CREDITS**

- English Composition (Wr 121 and either 122 or 123. Grade of C or above) . . . 6
- Physical Education (5 terms) . . . 5
- Health (HE 250) . . . 3

GROUP REQUIREMENTS

- Arts and Letters, Sciences, Social Sciences (Six three-credit courses in each area) . . . 18
- Professional School Majors
  - Arts and Letters, Sciences, Social Sciences (Three three-credit courses from each group plus nine additional credits from any of the groups) . . . 18

BA REQUIREMENTS

- Language and Literature and equivalent of two years of college study in one foreign language . . . 36

BS REQUIREMENTS

- Social Science or Science, and math proficiency at Mth 101 or above or computer science. Consult with your adviser. 36

Up to 12 credits of vocational-technical courses may be accepted as blanket elective credit.

FOR STUDENTS PLANNING TRANSFER TO *OREGON STATE UNIVERSITY*

GROUP REQUIREMENTS — **CREDITS**

- English Composition (Wr 121. grade C or above.) . . . 3
- Physical Education (PE 185. 3 terms-one course term.) . . . 3
- College of Liberal Arts Math requirement (Mth 95 proficiency and one additional course. excluding Mth 191. 192. 193.) . . . 8

GENERAL EDUCATION

- Physical. Biological and or Math Sciences (refer to math science list pg. 11). . . . 15
- Humanities and or Arts (refer to humanities list pg. 11. excluding first year foreign languages. speech and writing courses) . . . 12
- Social Science (refer to social science list page 11. excluding SSc. Hst. and CJ prefixed courses.) . . . 12

OREGON STATE UNIVERSITY CONTINUED

- Written and Oral English Communication (includes Wr 122, 123, Sp 112, 113, BA 214, and complete first year foreign language sequence.) . . . 6

RECOMMENDED SCHEDULE*

Freshman Year

Fall Term
- Wr 121 . . . 3
- PE Activity . . . 1
- Humanities Group . . . 3
- Social Science Group . . . 3
- Major or Elective . . . 6

Winter Term
- Communications . . . 3
- PE Activity . . . 1
- Humanities Group . . . 3
- Social Science Group . . . 3
- Major or Elective . . . 6

Spring Term
- Communications . . . 3
- PE Activity . . . 1
- Humanities Group . . . 3
- Social Science Group . . . 3
- Major or Elective . . . 6

Sophomore Year

Fall Term
- Humanities Group . . . 3
- Math/Science Group . . . 4
- Major or Elective . . . 9

Winter Term
- Social Science Group . . . 3
- Math/Science Group . . . 4
- Major or Elective . . . 9

Spring Term
- Math/Science Group . . . 8
- Major or Elective . . . 9

*The sequence of courses in this schedule is subject to rearrangement for students planning to enter an engineering program. Consult with adviser (Mr. DuBois).

Up to 45 credits of vocational-technical coursework will be accepted for transfer under terms of a block transfer agreement. Transfer of other vocational-technical credit may be approved by appropriate OSU departments.

FOR STUDENTS PLANNING TRANSFER TO *PORTLAND STATE UNIVERSITY.* BASIC COURSES REQUIRED FOR ALL BACCALAUREATE DEGREES

GENERAL REQUIREMENTS — **CREDITS**

- Physical Education and Health 8
  - Physical Education (5 different activities, 5 different terms)
  - Health (HE 250)
- English Composition (Wr 121, 123) 6

DISTRIBUTION REQUIREMENTS

- Arts and Letters - (Including at least 9 credits from one department) 18
  (art, film arts, English literature, foreign languages, journalism, music, philosophy, speech, theatre)
- Math/Science - (Including at least 9 credits from one department) 18
  (biology, chemistry, geology, physical science, zoology, physics, botany, mathematics. Refer to math/science list on page 11).
- Social Science - (Including at least 9 credits from one department) 18
  (anthropology, economics, geography, history, political science, psychology, sociology, general social science. Refer to social science list pg. 11).

RECOMMENDED SCHEDULE*

Freshman Year

Fall Term
- Arts/Letters Group 3
- Math/Science Group 3
- Wr 121 3
- Social Science Group 3
- Major or Elective 3

Winter Term
- PE Activity 1
- Arts/Letters Group 3
- Math/Science Group 3
- Wr 123 3
- Social Science Group 3
- Major or Elective 3

Spring Term
- PE Activity 1
- Arts/Letters Group 3
- Math/Science Group 3
- HE 250 3
- Social Science Group 3
- Major or Elective 3

Sophomore Year

Fall Term
- PE Activity 1
- Arts/Letters Group 3
- Math/Science Group 3
- Social Science Group 3
- Major or Elective 6

Winter Term
- PE Activity 1
- Arts/Letters Group 3
- Math/Science Group 3
- Social Science Group 3
- Major or Elective 6

Spring Term
- PE Activity 1
- Arts/Letters Group 3
- Math/Science Group 3
- Social Science Group 3
- Major or Elective 6

*The sequence of courses in this schedule is subject to rearrangement for students planning to enter an engineering program. Consult with adviser (Mr. DuBois).

FOR STUDENTS PLANNING TRANSFER TO *OREGON COLLEGE OF EDUCATION.*

SKILLS — **CREDITS**

- English Composition (Wr 121, 122, 123 or equivalent) 9
- Fundamentals of Speech (Sp 111 or equivalent) 3
- Mathematics (Mth 95 or Mth 191 or 192 or 193) 4
  (Placement test offered. Well-prepared students exempt from this requirement)
- Physical Education PE 185, 3 different types of activities, 3 different terms.) 3

DISTRIBUTION

- Creative Arts (3 credits each from at least 3 of the following areas: art, music, dance, theatre.) 9
- Literature (Eng 104, 105, 106, or Eng 107, 108, 109) 9
- Philosophy or Religion (Refer to humanities list, pg. 11). 3
- Social Science (Hst 101, 102, 103, plus one additional course from the social science list on pg. 11) 12
- Psychology (Psy 201) 3
- Science or Mathematics Sequence (from math/science list on pg. 11, excluding Ch 101, 102, 103 and BA 211, 212, 213) 12

RECOMMENDED SCHEDULE

Freshman Year

Fall Term
- Wr 121 3
- Sp 111 3
- Eng 104/Eng 107 3
- Hst 101 3
- Major or Elective 3-6

Winter Term
- Wr 122 3
- Mth 95 4
- Physical Ed Activity 1
- Eng 105/Eng 108 3
- Hst 102 3
- Major or Elective 3

Spring Term
- Wr 123 3
- Physical Ed Activity 1
- Eng 106/Eng 109 3
- Hst 103 3
- Major or Elective 6

Sophomore Year

Fall Term
- Physical Ed Activity 1
- Psy 201 3
- Creative Arts 4
- Math/Science 4
- Major or Elective 6

Winter Term
- Social Science Elective . . . 3
- Creative Arts . . . 3
- Math/Science . . . 4
- Major or Elective . . . 6

Spring Term
- Philosophy or Religion . . . 3
- Art, Music, Dance or Theatre . . . 3
- Math/Science . . . 4
- Major or Elective . . . 6

2.00 GPA required. Up to 24 credits of vocational-technical coursework applicable in an associate degree or certificate program accepted as elective credit.

FOR STUDENTS PLANNING TRANSFER TO *EASTERN OREGON STATE COLLEGE.* REQUIRED COURSES FOR ALL BACCALAUREATE DEGREES.

GENERAL EDUCATION **CREDITS**

(minimum credits, BA-60, BS-50. See Eastern Oregon State College catalog for approved courses)

- Humanities . . . 15
- Natural Sciences . . . 15
- Social Science . . . 15
- Writing Proficiency (by examination)
- Foreign Language (BA requirement) . . . 24

FOR STUDENTS PLANNING TRANSFER TO *SOUTHERN OREGON STATE COLLEGE.* BASIC COURSES REQUIRED FOR ALL BACCALAUREATE DEGREES

GENERAL REQUIREMENTS **CREDITS**
- English Composition (Wr 121, 122) . . . 6
- Speech (Sp 111 or 112 or 113) . . . 3
- (Above classes may be waived by demonstrating proficiency before screening committee.)

GENERAL EDUCATION REQUIREMENTS

Coursework with at least two different prefixes must be taken in each of the following groups.
- Humanities (art, English, languages, journalism, music, philosophy, religion, speech, theatre) . . . 18
- Math/Science (biology, chemistry, geology, general science, mathematics, physics. Refer to math/science list pg. 11, excluding BA 211, 212, 213) . . . 18
- Social Science (anthropology, economics, criminology, general social science, psychology, sociology. Refer to social science list pg. 11) . . . 18

BA REQUIREMENT
- Foreign Language (two years college study or equivalent)

RECOMMENDED SCHEDULE

Freshman Year

Fall Term
- Wr 121 . . . 3
- Speech . . . 3
- Humanities Group . . . 3
- Math/Science Group . . . 3
- Social Science Group . . . 3

Winter Term
- Wr 122 . . . 3
- Humanities Group . . . 3
- Math/Science Group . . . 3
- Social Science Group . . . 3
- Major or Elective . . . 3

Spring Term
- Humanities Group . . . 3
- Math/Science Group . . . 3
- Social Science Group . . . 3
- Major or Elective . . . 6

Sophomore Year

Fall Term
- Humanities Group . . . 3
- Math/Science Group . . . 3
- Social Science Group . . . 3
- Major or Elective . . . 6

Winter Term
- Humanities Group . . . 3
- Math/Science Group . . . 3
- Social Science Group . . . 3
- Major or Elective . . . 6

Spring Term
- Humanities Group . . . 3
- Math/Science Group . . . 3
- Social Science Group . . . 3
- Major or Elective . . . 6

FOR STUDENTS PLANNING TRANSFER TO *OREGON INSTITUTE OF TECHNOLOGY.* BASIC COURSES REQUIRED FOR ALL BACCALAUREATE DEGREES

GENERAL EDUCATION REQUIREMENTS **CREDITS**
- Physical Education (PE 185 - three different activities, three different terms) . . . 3
- Health (HE 250) . . . 3
- Speech (Sp 111) . . . 3
- English Composition (Wr 121, 122) . . . 6
- Psychology (Psy 201) . . . 3
- Math/Science (Mth 101) . . . 4
- Math/Science . . . 12
- Social Science (Ec 201, 202, 203; Geog 105, 106, 107; Hst 101, 102, 103, 201, 202, 203; Psy 202, 203) . . . 6

Students enrolled in vocational programs may block transfer their Associate in Science degree under certain circumstances. Consult with your adviser.

PROGRAM DESCRIPTIONS

Transfer programs described below and on the following pages are designed to prepare students for entering Oregon State System of Higher Education four-year colleges and universities at the upper division level (or at the sophomore level, in the case of one-year programs).

Because lower-division requirements vary among four-year institutions, and are subject to change by each institution, Clatsop Community College is not able to publish all specific requirements in its catalog.

Students planning to seek a degree at one of these four-year institutions are strongly urged to acquaint themselves with the specific requirements of their major program. Faculty advisers at Clatsop Community College maintain complete and up-to-date transfer information and are eager to assist students in planning their programs.

Students may elect to obtain an Associate in Arts degree at Clatsop Community College, while completing the lower division requirements of their anticipated four-year institution. The Associate in Arts degree will normally require additional coursework beyond that established for a specific transfer program.

The Associate in Arts degree is not required for entry into upper division work at a four-year institution. However, students who have not decided upon a specific course of study, or who have not selected a four-year institution, are advised to complete the Associate in Arts degree. Coursework for this degree is designed to afford the maximum possible transferability of credits to four-year institutions in the United States.

Several of the state system colleges and universities will accept a limited number of vocational-technical course credits earned at Clatsop Community College toward baccalaureate degree requirements. Students interested in utilizing such credits should consult closely with their adviser, the Clatsop Community College Director of Admissions and the director of admissions of the institution to which they plan to transfer.

Some state system institutions will accept block transfer of vocational credits by special arrangement. OIT, in particular, prefers that transfer students in certain programs obtain their associate degree prior to transferring. Vocational faculty advisers can help determine which vocational programs allow block transfer.

Students are strongly urged to consult with their faculty adviser, regardless of their current program enrollment or plans for transfer of credit.

ADMINISTRATIVE OFFICE MANAGEMENT

Length of Program: Two years
Advisers: Lorraine Fairfield, John Holmstedt
For students planning to major in administrative office management at Oregon State University.

AGRI-BUSINESS

Length of Program: Two years
Adviser: Reed Stucki
For students planning to major in agri-business at Eastern Oregon State College. EOSC will accept up to 45 credits of Clatsop's technical agriculture courses for transfer into this program. Students should note that they will not be eligible for the Associate in Arts degree in Liberal Arts and Science from Clatsop Community College unless they complete 90 credits of college transfer courses and meet all degree requirements.

AGRICULTURE

Length of Program: Two years
Advisers:
Agriculture:Reed Stucki, Don Stangel
Fisheries and Wildlife Science: John Christie
Food Science: Margaret McCarter
Enables students to transfer into most of the major curricula offered by the school of agriculture at the junior level and complete baccalaureate degree programs with an additional two years of study. Students who wish to pursue major work in fisheries science, food science and technology, and wildlife science should transfer at the end of the freshman year.

AMERICAN STUDIES

Length of Program: Two years
Adviser: Mel Berens
American Studies encompasses all things New World, especially American--origins, values, processes, products, the will and spirit of a people--across the traditional departmental lines of knowledge. The work scheduled in several departments is as challenging and rigorous as that traditionally centered in one department. Students may also double major, receive commissions in the Army, Navy/Marine, Air Force, or receive teaching certificates in secondary education at the same time they receive either the BA or BS degree.

The baccalaureate degree in American Studies requires a year's course in American history; a year's course in American literature; a junior year seminar on a selected topic; and a minimum of 24 hours of upper-division, approved courses relating to the student's concentration, including Black, Chicano, Native American, and Women's Studies concentrations.

A basic two-year program at Clatsop Community College, transferring to OSU, emphasizes courses in American history and American literature. Elective courses should be in the social sciences, the sciences and the arts.

ANTHROPOLOGY

Length of Program: Two years
Adviser: Brian Harrison
For students planning to major in anthropology at the University of Oregon, Oregon State University or Portland State University and for students planning a combined major in anthropology and sociology at Eastern Oregon State College.

ARCHITECTURE AND INTERIOR ARCHITECTURE

Length of Program: Two years.
Advisers: Roy Garrison, Stan Wanlass
Students wishing to transfer into major programs in architecture and interior architecture at the University of Oregon should be aware that these programs are receiving a great many more applications for admission from qualified students than can be accommodated in the programs.

Students completing a liberal arts preprofessional program at Clatsop Community College should normally expect that four or five additional years are required to complete the professional program in architecture or interior architecture following admission as a regular major at the University of Oregon.

ART

Length of Program: Two years
Advisers: Royal Nebeker, Stan Wanlass, Roy Garrison
For students who plan to transfer to a major program in art at the University of Oregon, Oregon State University, Portland State University, Eastern Oregon State College, Southern Oregon State College, and Oregon College of Education. Able students who satisfactorily complete the program will be able to complete requirements for a BA/BS degree with two additional years of work.

A five-year program in art leading to the bachelor of fine arts (BFA) degree is offered at the University of Oregon (ceramics, visual design, jewelry and metalsmithing, painting, printmaking, sculpture, weaving) and a four-year program leading to a BFA in applied visual arts is offered at Oregon State University (advertising design, crafts design, or individually approved combinations of areas offered).

ART EDUCATION

Length of Program: Two years
Advisers: Roy Garrison, Stan Wanlass, Royal Nebeker
For students planning to transfer to the University of Oregon, Southern Oregon State College, Oregon College of Education, or Eastern Oregon State College.

Students planning to complete their baccalaureate degree program at Portland State University or Oregon State University (with a basic teaching norm in art) should complete the transfer program in art, modified to include General Psychology and one term of Fundamentals of Speech during the sophomore year.

ART HISTORY

Length of Program: Two years
Advisers: Roy Garrison, Stan Wanlass
For students who plan to transfer to the major program in art history at the University of Oregon. Students transferring into this program at the University of Oregon must have a grade point average of 2.50.

ATMOSPHERIC SCIENCE

Length of Program: Two years
Adviser: Ed DuBois
For students who plan to transfer to the major program in atmospheric sciences at Oregon State University. Because of the highly professional and exacting nature of the instruction in atmospheric sciences, students should plan on transferring after one year of Clatsop Community College work. Students should be aware that if they transfer more than one year of community college work, it may take them more than four years to complete a degree. The amount of time required to complete the major program will depend upon the ability and industry of the student, and the level of achievement in mathematics at the time of transfer.

AUTO-DIESEL TECHNOLOGY

Length of Program: Two years
Advisers: Don Fisher, Dale Perkins
Students completing an associate degree program at Clatsop Community College in industrial mechanics technology with an automotive specialty and a cumulative GPA of 2.25 may transfer at the junior level to the Oregon Institute of Technology (OIT) bachelor of science program in auto-diesel technology. Specific OIT re-

quirements must be included in the associate degree program. OIT prefers that students transfer the associate degree program as a block, in which case the courses need not be identified as transfer courses. Students whose associate degree programs lack some required courses may be allowed to transfer with the provision that these courses be completed at OIT.

BIOCHEMISTRY
BIOPHYSICS

Length of Program: One year
Advisers: Biochemistry: Dave Kruger
Biophysics: Ed DuBois

Oregon State University recommends that biochemistry and biophysics majors take as much of the work as possible on their campus. For students desiring to begin at Clatsop Community College, a one-year program is available. At least four additional years of study at Oregon State University will be needed after transfer. Continuing consultation with academic adviser is critically important.

BIOLOGY
(BOTANY-ENTOMOLOGY-MICROBIOLOGY-ZOOLOGY)

Length of Program: One year
Adviser: Margaret McCarter

For students who plan to transfer to a major program in biology at the University of Oregon, Portland State University, Eastern Oregon State College, Southern Oregon State College, or Oregon College of Education; or to a major program in botany, entomology, microbiology, zoology, or biology at Oregon State University. Students may complete the requirements for the baccalaureate degree with three additional years of work at the four-year institution.

BUSINESS ADMINISTRATION
BUSINESS AND ECONOMICS

Length of Program: Two years
Advisers: George Phillips, Pat Ellsberg

Permits a student to transfer into any of the major programs in business administration offered by institutions of the Oregon State System of Higher Education, or the program in business and economics at EOSC, at the junior level. Special additional requirements apply at the University of Oregon. Continuing consultation with academic advisers is critically important.

BUSINESS EDUCATION
DISTRIBUTIVE EDUCATION

Length of Program: Two years
Advisers: Lorraine Fairfield, John Holmstedt

For students planning to major in business education at Oregon State University, Southern Oregon State College, Portland State University, or Eastern Oregon State College; or in distributive education at Oregon State University or Southern Oregon State College.

CHEMISTRY

Length of Program: One year
Adviser: Dave Kruger

For students planning to major in chemistry at the University of Oregon, Oregon State University, Portland State University, Southern Oregon State College, or Eastern Oregon State College. After one year at Clatsop Community College, at least three more years of study will be needed after transfer to complete the remaining requirements. Continuing consultation with academic adviser is critically important.

CHEMISTRY-BUSINESS

Length of Program: One year
Adviser: Dave Kruger

Permits a student to transfer into the interdisciplinary major program in chemistry-business at Southern Oregon State College at the junior level. Students may complete requirements for the baccalaureate degree with two additional years of work.

COMMUNITY SERVICE AND PUBLIC AFFAIRS

Length of Program: Two years
Adviser: Mel Berens

For students planning to transfer to the Lila Acheson Wallace School of Community Service and Public Affairs at the University of Oregon.

COMPUTER SCIENCE

Length of Program: One or two years
Adviser: Bill Campbell

Work in computer science is offered in the mathematics department of Portland State University as a major program in mathematics, and as a major program by the departments of computer science at Oregon State University and the University of Oregon. OSU also offers a four-year program in engineering (computer science).

Students interested in the OSU program offered in the school of engineering should complete the transfer program in engineering, found elsewhere in this section. Transfer information on OIT programs in the engineering technologies, including computer systems engineering technology, is also found elsewhere in this section.

Students who transfer at the end of the sophomore year may find that more than two additional years are required, depending upon their background in mathematics and computer science (data processing) at transfer.

CRIMINAL JUSTICE

Length of Program: Two years
Adviser: Boyd Roberts
Clatsop Community College students interested in professionally oriented programs of study leading to careers in criminal justice (law enforcement, corrections) have three possibilities open to them.

1. Students not planning to continue their education beyond the associate degree may enroll in the criminal justice program outlined on page 37.

2. Students planning to complete baccalaureate degrees majoring in some area of criminal justice may choose baccalaureate programs at Portland State University, Southern Oregon State College and Oregon College of Education. Clatsop Community College offers the first two years of study for each of these.

3. Students already employed in the field of criminal justice who wish course work applicable both to their employment and to a baccalaureate degree may choose a professional or balanced curriculum. This offers preparation for employment at the associate degree level and also meets the requirements for transfer to a four-year program.

DANCE

Length of Program: One or two years
Adviser: Ma Prem Anugita
Students transferring into the dance major program at the University of Oregon must have a GPA of 2.50, should have met the University's English composition and health education requirements, and have completed a majority of the University's group requirements. The physical education requirement of five terms of activity courses is met by courses in dance technique. Placement in technique classes at the University is by audition, not by number of credits or types of courses taken.

If a student's skill level is insufficient to place in professional dance courses, completing the dance major will probably extend the length of the degree program beyond four years.

Two degrees in dance are available at the University: Bachelor of Arts and Bachelor of Sciences. Students wishing to receive the BA should begin the foreign language requirement at Clatsop Community College; those pursuing the BS should complete the three-term mathematics requirement before transfer.

DENTAL HYGIENE

Length of Program: One or two years
Adviser: Dave Kruger
For students interested in seeking admission to a professional program in dental hygiene at Oregon Institute of Technology.

Students should be aware that admission to programs in dental hygiene is competitive. Preprofessional studies must include stipulated courses in basic sciences and English composition for a minimum of 45 hours of work. A cumulative grade point average of 2.50 on all college work is required for admission to the program.

The professional program in dental hygiene at OIT is two years in length. Graduates of the program are eligible for licensure examination.

Students who wish to earn a bachelor of science degree in dental hygiene in preparation for entry into the field may do so at the University of Oregon Health Sciences Center School of Dentistry. Completion of the two-year predental hygiene curriculum at Clatsop Community College is required for admission to the two-year upper-division professional curriculum. Students should be aware that academic performance is a major consideration in admission to the dental hygiene curriculum. Continuing consultation with academic adviser is critically important.

DENTISTRY

Length of Program: One year
Adviser: Dave Kruger
Students should be aware that admission into professional schools of dentistry is highly competitive. A minimum of three years is needed to complete the preprofessional program. Clatsop Community College offers a one-year program for students planning to transfer to a preprofessional program in dentistry at one of the institutions of the Oregon State System of Higher Education. The student should plan to transfer to the four-year institution after the freshman year. Consult academic adviser.

ECONOMICS

Length of Program: Two years
Adviser: George Phillips
For students planning to major in economics at the University of Oregon, Oregon State University, Portland State University, Southern Oregon State College, or Oregon College of Education.

EDUCATION (Elementary)

Length of Program: Two years
Adviser: Ellen Shannon
For students planning to major in elementary education at Eastern Oregon State College, Oregon College of Education, Oregon State University, Portland State University, Southern Oregon State College, and the University of Oregon.

EDUCATION (Secondary)

Length of Program: One or two years
Adviser: John Rupp
Students planning to become high school teachers should enroll in the transfer program for the subject they plan to teach, adding Sp 111 Fundamentals of Speech. Students planning to teach social studies should complete the transfer program in general social science. Students planning to major in speech, language arts, or drama education at Oregon College of Education should consult with their adviser for additional information.

EDUCATION (Industrial Education)

Length of Program: Two years
Adviser: Dave Phillips
Students planning to become high school or community college industrial arts or industrial trade-technical teachers may complete the first two years of training at Clatsop Community College if they plan to obtain their baccalaureate degree at Oregon State University.

Coursework at Clatsop Community College consists of 48 credit hours of lower division general education requirements and 45 credit hours of vocational-technical coursework (or trade competency).

ENGINEERING

Length of Program: Two years
Adviser: Ed DuBois
A two-year program has been developed with the assistance of the Oregon State University School of Engineering to facilitate transfer into that institution's professional engineering program. Minor modifications may be required for students transferring to Portland State University or other institutions.

Approximately 85% of all recent Oregon State University engineering graduates have required more than four years to complete a bachelor of science degree. The Oregon State University School of Engineering therefore urges students to plan a five year curriculum, two years of which would normally be completed at Clatsop Community College. However, exceptionally capable and well-prepared students may be able to graduate after one year at Clatsop Community College and three years at Oregon State University. Continuing consultation with academic adviser is critically important.

ENGINEERING TECHNOLOGY

Length of Program: Two years
Adviser: Ernest Davis
Students completing an associate degree program at Clatsop Community College in civil engineering technology, electronic technology, or industrial mechanics technology with a cumulative GPA of 2.25 may transfer at the junior level to Oregon Institute of Technology to a Bachelor of Technology program. Specific requirements must be included in the associate degree program. OIT prefers that students transfer the associate degree program as a block, in which case the courses need not be identified as college transfer courses. Students whose associate degree programs lack some of the required courses may be allowed to transfer with the provision that these courses be completed at OIT. Continuing consultation with academic adviser is critically important.

ENGLISH

Length of Program: Two years
Advisers: John Rupp, Ellen Shannon, Shirley Thomas
For students planning to major in English at the University of Oregon, Oregon State University, Portland State University, Eastern Oregon State College, Southern Oregon State College or to enter a program for the preparation of English or humanities teachers at Oregon College of Education.

ENVIRONMENTAL HEALTH TECHNOLOGY

Length of Program: One year
Adviser: Dave Kruger
For students who wish to enter the two-year

associate degree program in environmental health technology at Oregon Institute of Technology at the sophomore level. One additional year at OIT will be necessary to complete the program.

ENVIRONMENTAL TECHNOLOGY

Length of Program: Two years
Adviser: Dave Kruger
The environmental technology program leading to the bachelor of science degree at Oregon Institute of Technology is an "upper-division only" curriculum intended to meet the multidisciplinary character of the environmental problems of business, industry, government and society.

The environmental technology program is designed to accept associate degrees on a block transfer basis and award the bachelor's degree upon completion of the two additional years of the curriculum. (Block transfer refers to block transfer of the associate degree, regardless of specific curricular content, and recognizing the student to be of junior standing.)

The program provides technical emphasis beyond the associate degree in a choice of three established occupational specialty areas:

1. Environmental Coordinator
2. Water Quality Control
3. Water and Wastewater

A need is also developing for technical personnel in solid waste treatment, particularly as it relates to water quality, and recycling of metals and plastic; occupational health and safety in industrial settings such as noxious contaminants, vibration and noise control; urban planning and environmentally related public health and other types of sanitarian personnel.

FOREIGN LANGUAGES

Length of Program: Two years
Adviser: Karin Temple
For students who plan to transfer to the major program in foreign languages at the University of Oregon, Portland State University, or Oregon State University or into the major program in Spanish at Southern Oregon State College, or into a program for the preparation of foreign language teachers at Oregon College of Education, Southern Oregon State College, or Eastern Oregon State College.

FORESTRY

Length of Program: One year
Adviser: John Christie
Prepares students to enter professional curricula in forestry or the program in resource recreation management offered by the School of Forestry at Oregon Sate University at the sophomore level. Students planning to enter a professional program of forestry at OSU or some other institution should transfer immediately upon completion of the one-year preforestry program. Forestry is a complex and demanding profession. Students will find that the one-year preforestry program must be followed by at least three years at a professional school of forestry to complete baccalaureate degree requirements.

GENERAL ARTS AND LETTERS
GENERAL STUDIES IN THE ARTS

Length of Program: Two years
Advisers: John Rupp, John Hauser, Shirley Thomas, Ellen Shannon, Don Scallan, Brian Harrison
For students planning to major in general literature or general humanities at the University of Oregon; in general studies in arts and letters at Portland State University; in general studies in humanities at Eastern Oregon State College; in liberal arts at Oregon College of Education or in general studies in the arts at Oregon College of Education.

GENERAL SCIENCE

Length of Program: Two years
Adviser: Ed DuBois
For students planning to major in general science at the University of Oregon or Oregon State University, or in general studies in science at Portland State University, Eastern Oregon State College, Oregon College of Education, or Southern Oregon State College.

GENERAL SOCIAL SCIENCE
LIBERAL STUDIES

Length of Program: Two years
Adviser: Mel Berens
For students planning to major in general social science at Eastern Oregon State College, Oregon College of Education, Portland State University, or Southern Oregon State College; or in liberal studies at Oregon State University.

GEOGRAPHY

Length of Program: Two years
Adviser: Mel Berens
For students who plan to transfer to the major program in geography at the University of Oregon,

Southern Oregon State College, Portland State University, Oregon State University, or Oregon College of Education. Geography courses offered on an alternate year basis at Clatsop Community College.

GEOLOGY

Length of Program: Two years
Adviser: Paul See
For students planning to major in geology at the University of Oregon, Oregon State University, Portland State University or Southern Oregon State College.

GERONTOLOGY

Length of Program: Two years
Adviser: Mary Gabriel
For students who are interested in transferring to the major program in gerontology at the University of Oregon. Prospective gerontology majors may apply for admission to the baccalaureate degree program upon meeting the following criteria: successful completion of lower-division university group requirements, 90 credit hours of college work with a 2.50 cumulative grade point average in all graded courses, and at least one full term of studies at the University of Oregon.

Undergraduate education in gerontology is designed to be interdisciplinary. The program combines classroom work and supervised field experience in an effort to integrate learned knowledge of the older population with direct interaction among the elderly.

The UO Center for Gerontology also offers a Certificate in Gerontology for University of Oregon students who are majoring in another subject and would like to complete 24 credit hours in gerontology.

HEALTH AND HEALTH EDUCATION

Length of Program: Two years
Advisers: Jack Brown, Mary Gabriel, Anne Klinger
For students interested in completing a major program in health or health education at Oregon State University, Portland State University, the University of Oregon, or Oregon College of Education. All of the programs lead to teacher certification in health. The OSU program in health also offers major options in community health, environmental health, school health and safety, and safety studies. The PSU program, combined with PSU's certificate program in public health studies, prepares students in community health. The UO program offers opportunities for specialization in community health, gerontology, traffic safety, school health, and comprehensive health.

HEALTH CARE ADMINISTRATION

Length of Program: Two years
Adviser: George Phillips
For students planning to major in health care administration at Oregon State University.

HISTORY

Length of Program: Two years
Advisers: Mel Berens, John Hauser
For students planning to major in history at the University of Oregon, Oregon State University, Portland State University, Eastern Oregon State College, or Southern Oregon State College; or in social science-history at Oregon College of Education.

HOME ECONOMICS

Length of Program: Two years
Adviser: Margaret McCarter
For students planning to major in home economics at Oregon State University.

HOTEL AND RESTAURANT MANAGEMENT

Length of Program: Two years
Adviser: George Phillips
For students planning to major in hotel and restaurant management at Oregon State University.

INDUSTRIAL MANAGEMENT

Length of Program: Two years
Adviser: Don Fisher
Industrial management is an upper-division supervisory and mid-management skills program offered at Oregon Institute of Technology to associate degree graduates from three fields of technology: accounting, engineering, and industrial. Since the BS program includes advanced technology as well as a management "core" and specialization, students from general or business administration transfer programs are not admitted. The flexible program, recommended for students and working adults whose career goal has shifted from technology to mid-management, normally requires two additional years of work beyond the associate degree. All students choose a specialization in either industrial marketing or

operations and take at least 15 credits of advanced coursework in their technology. for accounting students, technical courses focus on analysis and operation of computerized systems. OIT prefers that students transfer an appropriate associate degree program as a block, rather than transfer before achieving the associate degree.

INDUSTRIAL PROCESSES TECHNOLOGY

Length of Program: Two years
Adviser: Don Fisher
Students completing an associate degree program in industrial mechanics at Clatsop Community College with a cumulative GPA of 2.25 may transfer to an Oregon Institute of Technology (OIT) bachelor of science program in industrial processes technology at the junior level. Specific requirements must be included in the associate degree program. OIT prefers that students transfer the associate degree program as a block, in which case the courses need not be identified as college transfer courses. Students whose associate degree programs lack some of the required courses may be allowed to transfer with the provision that these courses be completed at OIT.

INTERNATIONAL STUDIES

Length of Program: Two years
Adviser: Mel Berens
An undergraduate major leading to the Bachelor of Arts degree in International Studies is available at the University of Oregon. It is interdisciplinary in nature; coursework is taken in a wide variety of disciplines.

There are no prerequisites to the program as such, although a broad background in the social sciences, humanities, and foreign languages is essential.

The program entitled Political Science, listed elsewhere in this section, will prepare students for junior standing in International Studies at the University of Oregon.

INTERDISCIPLINARY STUDIES

Length of Program: Two years
Adviser: Mel Berens
Enables students to design their college program to take advantage of current career opportunities. Many problems facing society do not fit easily into traditional degree program structures, but require a familiarity with the content and quality of thought from a variety of disciplines. As an example, the study of environmental or ecological problems is not confined to the boundaries of life sciences, but involves economics, geography, philosophy, psychology, and aesthetics. The problem-oriented interdisciplinary studies program allows students with definite ideas and plans for the future to prepare for their careers in a personalized manner.

JOURNALISM

Length of Program: Two years
Adviser: Paul Barnum
For students planning to major in journalism at the University of Oregon. Lower-division journalism courses at community colleges are not required in the major and, if completed, will not be accepted by the University of Oregon toward meeting upper-division requirements. These courses may be taken as electives if desired. Proficiency in the use of the typewriter is essential to success as a journalism student. Unless proficiency has already been established, the student should enroll in typing courses as electives.

JOURNALISM-TECHNICAL

Length of Program: One year
Adviser: Paul Barnum
For students who plan to transfer to a major program in technical journalism at Oregon State University. Students may complete requirements for the baccaluareate degree with three additional years of work. A technical minor is required as part of the major program in technical journalism. This minor, consisting of 27-36 credits of work, may be completed in aerospace studies, agriculture, applied economics, applied safety studies, business administration, civil engineering technology, forestry, health sciences, home economics, military science, naval science, oceanography, pharmacy, or science. The minor may be completed after transfer.

LANDSCAPE ARCHITECTURE

Length of Program: One year
Adviser: Roy Garrison
Preprofessional program for students wishing to transfer into a major program in landscape architecture at the University of Oregon. Students should be aware that admission to this program is on a competitive basis. Students who complete this program may enter the landscape architecture program at the University of Oregon at the sophomore level and complete their work with an additional four years of study.

LAW

Length of Program: Two years
Adviser: Mel Berens
Preprofessional Program-- The University of Oregon requires a baccalaureate degree before admission to its School of Law. Intellectual maturity and breadth of educational background are considered more important than particular subject matter. A student may pursue an undergraduate major from among those usually available in the humanities, social science, natural science, business, or applied science curricula.

LAW ENFORCEMENT (See Criminal Justice)

MATHEMATICS

Length of Program: One or two years
Advisers: Sue Richardson, Milford Stevens, Geraldine Swenson
For students planning to major in mathematics at the University of Oregon, Oregon State University, Portland State University, Eastern Oregon State College, or Southern Oregon State College; or in natural science-mathematics at Oregon College of Education. In order to complete their baccalaureate program in four years, students should complete Mth 203 by the end of the sophomore year. Students ready to begin calculus fall term may find it advantageous to transfer at the end of the freshman year.

MEDICAL TECHNOLOGY

Length of Program: One year
Adviser: Dave Kruger
Preprofessional Program-- Students should be aware that admission into professional schools of medical technology is competitive. The preprofessional program is three years in length. Clatsop Community College offers a one-year program for students planning to complete their preprofessional studies at any of the institutions of the Oregon State System of Higher Education.

MEDICINE

Length of Program: One year
Adviser: Dave Kruger
Preprofessional Program-- Students should be aware that admission into professional schools of medicine is highly competitive. A minimum of three years is needed to complete the preprofessional programs. Clatsop Community College offers a one-year program for students planning to transfer to a preprofessional program in medicine at any of the institutions of the Oregon State System of Higher Education. Choice of electives and other required courses will depend on the school to which the student plans to transfer. Consult with academic adviser.

MUSIC

Length of Program: Two years
Adviser: Art Vaughn
For students planning to major in music or music education at the University of Oregon, Oregon State University, Portland State University, or Southern Oregon State College; or in music education at Oregon College of Education or Eastern Oregon State College. Subject to proficiency examinations in performance, the student will be able to complete a baccalaureate program in two additional years after transfer.

NURSING

Length of Program: One year
Adviser: Margaret McCarter
Students planning to study nursing generally enter one of two programs.

Four-year baccalaureate degree program: Students wishing to enter this program at the University of Oregon Health Sciences Center School of Nursing complete the first year of study at Clatsop Community College.

Two-year associate degree or three-year diploma program: Students wishing to enroll in one of these programs at another college may elect to attend Clatsop Community College for one year to remove admission deficiencies and to take some courses listed in the individual programs. This will not usually reduce the time required to complete the course of study at another institution.

OPTOMETRY

Length of Program: Two years
Adviser: Don Scallan
Preprofessional Program-- Students should be aware that admission into professional schools of optometry is competitive. A minimum of two years of preprofessional study is required; however, many students complete three years of study before entering an optometry school. Clatsop Community College offers a program for students planning to enter the College of Optometry at Pacific University. After completing the two-year program, students will need to attend a minimum of one summer session at Pacific University or elsewhere to complete the preoptometry requirements.

PEST MANAGEMENT FOR PLANT PROTECTION

Length of Program: One year
Adviser: Don Stangel
Environmental contamination resulting from what are generally regarded as necessary activities, such as food production, has necessitated a revised view of approaches to pest control in the direction of taking into account more factors that relate to pest control. These may be biological, economic, or social. This approach has been designated pest management.

A four-year pest management program has been initiated at Oregon State University. It is available in several departments of the schools of agriculture and science, botany and plant pathology, entomology, horticulture, and soil science. Clatsop Community College students should plan to transfer to OSU after their freshman year.

PHARMACY

Length of Program: One year
Adviser: Dave Kruger
Preprofessional Program-- Students planning to major in pharmacy at Oregon State University should be aware that admission to the program is on a competitive basis. Students who complete this one-year program should then transfer to Oregon State University, where they will complete one more year of preprofessional study and three years in the professional program.

PHILOSOPHY

Length of Program: Two years
Adviser: John Hauser
For students planning to major in philosophy at the University of Oregon, Oregon State University, or Portland State University.

PHYSICAL EDUCATION

Length of Program: Two years
Advisers: Jack Brown, Anne Klinger
Students who wish to become physical education instructors and athletic coaches must begin course work in professional activities during the freshman year if they are to complete a baccalaureate degree program in four years. Service course work in physical education cannot be substituted for the professional activity courses.

The program will permit transfer into professional physical education and/or teacher preparation programs offered by State System institutions.

PHYSICAL SCIENCE TECHNOLOGY

Length of Program: One year
Adviser: Ed DuBois
For students planning to transfer to Oregon Institute of Technology and complete an associate degree program in physical science technology. One additional year of work will be needed following transfer.

PHYSICAL THERAPY

Length of Program: Two years
Adviser: Mary Gabriel
Preprofessional Program-- Students should be aware that admission into professional physical therapy programs is competitive. A minimum of three years of preprofessional study is required. Clatsop Community College offers a program for students planning to enter the physical therapy program at Pacific University.

PHYSICS

Length of Program: One or two years
Adviser: Ed DuBois
For students who plan to major in physics and whose high school records and placement examination scores show high ability in math and science and readiness to begin calculus.

Students completing a one-year program at Clatsop will require an additional three to four years to complete the bachelor of science degree in physics.

Students who are not prepared to enter **Math** 200/Physics 207 should plan to spend two years at Clatsop. Most others will transfer after one year.

POLITICAL SCIENCE

Length of Program: Two years
Adviser: Mel Berens
For students planning to major in political science at Oregon State University, the University of Oregon, Portland State University, or Southern Oregon State College.

PSYCHOLOGY

Length of Program: Two years
Adviser: Frank Satterwhite
Recommended for students who plan to transfer to the major program in psychology at the Univer-

sity of Oregon, Oregon State University, Eastern Oregon State College, Portland State University, Oregon College of Education, or Southern Oregon State College.

RECREATION AND PARK MANAGEMENT

Length of Program: One or two years
Adviser: John Christie
For students planning to major in recreation and park management at the University of Oregon, and in resource recreation management at Oregon State University. Students entering the recreation and park management program should plan to transfer at the end of their freshman year.

RELIGIOUS STUDIES

Length of Program: Two years
Adviser: John Hauser
For students planning to major in religious studies at the University of Oregon or Oregon State University.

SOCIOLOGY

Length of Program: Two years
Adviser: Brian Harrison
For students planning to major in sociology at the University of Oregon, Oregon State University, Portland State University or Southern Oregon State College; or in anthropology and sociology at Eastern Oregon State College.

SPEECH

Length of Program: Two years
Adviser: Don Scallan
For students planning to major in speech at the University of Oregon, Oregon State University, Portland State University, or Southern Oregon State College.

THEATRE

Length of Program: One or two years
Adviser: Reed Turner
For students planning to major in theatre at the University of Oregon or Oregon State University. One-year programs are also available for students planning to major in theatre at Portland State University and Southern Oregon State College.

VETERINARY MEDICINE

Length of Program: One year
Adviser: Dave Kruger
Preprofessional Program-- Students should be aware that admission into professional schools of veterinary medicine is highly competitive. Exceptional students may complete the preprofessional requirements in less than three years. Most students admitted to veterinary school have more than four years of college preparation. Clatsop Community College offers a one-year program for students planning to transfer to a preprofessional program in veterinary medicine at Oregon State University. The student should plan to transfer after the freshman year.

Vocational-Technical Education

Minimum Requirements, General Education, Cooperative Education, Program Descriptions

Vocational-technical programs provide students an opportunity to acquire the skills and knowledge required for entry into current and developing fields of employment. Each program is regularly reviewed and updated by an advisory committee of representatives from related business, industry, and labor.

These programs normally require one or two years of study, and include a variety of general education subjects to insure that the degree candidate has, in addition to the technical skills acquired, a basic understanding of English, mathematics, science, and social science.

Shorter programs designed around specific training needs may qualify the student for a special diploma.

While technical courses are not specifically designed for transfer to a four-year college or university, a number are being accepted for transfer credit at some institutions. The prime purpose of vocational education, however, is to offer technical training to all students seeking intensive occupational preparation in a shorter time than the usual four-year college period.

The College grants the Associate in Science and the Associate in General Studies degrees to those students who (1) have completed either required curriculum, (2) have been recommended by the Academic Council, and (3) have participated in graduation ceremonies (unless excused).

SPECIAL NOTE:

1. Students may enter these programs during any quarter. However, those who enter after fall term and/or who take less credits than are indicated each quarter may need to spend more than the suggested one or two years to complete their program.

2. Some individuals may wish to take more credits than required by their program to expand their base of preparation.

MINIMUM REQUIREMENTS ASSOCIATE IN SCIENCE

1. Ninety credits minimum of approved course work.*
2. Cumulative grade point average of 2.00 or above for all college level work.**
3. Eighteen credits minimum of general education courses, or approved equivalent: (a) Six credits minimum of communications courses as listed on page 29. (b) Six credits minimum of social science courses as listed on page 29. (c) Six credits minimum of math or science courses as listed on page 29.
4. Required courses prescribed for specific major curriculum.
5. Attendance at Clatsop Community College at least two terms (including the last term before the Associate in Science degree is awarded) and completion of 24 credits at Clatsop Community College.
6. Physical Education, one credit (unless excused) PE 185.***
7. HE 250 Personal Health or HE 252 First Aid or 5.213 Advanced First Aid.

*Approved courses include all Lower Division Collegiate courses, and non-transfer courses numbered 0.500-9.999, with exception of 0.745 through 0.764. Courses numbered 0.500 through 0.999 may be used for elective credit only, and no more than 15 credits of such courses may be applied to the Associate in Science Degree. Student may apply a maximum of 24 credits of "pass" grades toward an associate degree at Clatsop Community College.

**Includes transferred credits taken at other colleges and universities that apply toward a Clatsop Community College degree.

***The Physical Education requirement may be waived upon application to the physical education department if the student (a) is over 21 years of age, (b) is a military veteran with at least 120 days of service, or (c) is physically disabled.

MINIMUM REQUIREMENTS ASSOCIATE IN GENERAL STUDIES

1. Ninety credits minimum of approved course work.*
2. Cumulative grade point average of 2.00 or above for all college level work.**
3. Six credits minimum of communications courses as listed on page 29.
4. Six credits minimum of social science courses as listed on page 29.
5. Six credits minimum of math or science courses as listed on page 29.
6. Attendance at Clatsop Community College at least two terms (including the last term before the Associate in General Studies degree is awarded) and completion of 24 credits at Clatsop Community College.
7. Physical Education. One credit (unless excused) PE 185.***
8. HE 250 Personal Health or HE 252 First Aid or 5.213 Advanced First Aid.

*Approved courses include all Lower Division Collegiate courses, and non-transfer courses numbered 0.500-9.999, with exception of 0.745 through 0.764. Courses numbered 0.500 through 0.999 may be used for elective credit only, and no more than 15 credits of such courses may be applied to the Associate in General Studies Degree. Student may apply a maximum of 24 credits of "pass" grades toward an associate degree at Clatsop Community College.

**Includes transferred credits taken at other colleges and universities that apply toward a Clatsop Community College degree.

***The Physical Education requirement may be waived upon application to the physical education department if the student (a) is over 21 years of age, (b) is a military veteran with at least 120 days of service, or (c), is physically disabled.

GENERAL EDUCATION SERIES

General education courses are included as part of each vocational curriculum to provide skills in communication, mathematics and science, and social sciences. Some of these courses are required; others are elective. Students seeking Associate in Science degrees must obtain a minimum of 18 credits of general education. They must also complete HE 250 Personal Health, HE 252 First Aid, or 5.213 Advanced First Aid and complete one credit of physical education unless excused.

The courses listed below meet the general education area requirements for degrees of Associate in Science and Associate in General Studies.

COMMUNICATIONS

Courses which meet the general education communications requirement of six credit hours:

1.100, 1.102 Vocational Communications . . . . . 3 credits each
2.524, 2.525 Business Correspondence I,II . . . . . 3 credits each
BA 214 Business Communications. . . . . 3 credits
Sp 111, 112, 113 Fundamentals of Speech . . . . . 3 credits each
Sp 270 Projects in Public Speaking. . . . . 1 credit
Wr 121, 122, 123 English Composition . . . . . 3 credits each

SOCIAL SCIENCES

Courses which meet the general education social science requirement of six credit hours:

Anth 101, 102, 103 General Anthropology . . . . . 3 credits each
CJ 100 Survey of the Criminal Justice System . . . . . 3 credits
CJ 110 Introduction to Law Enforcement . . . . . 3 credits
CJ 120 Introduction to the Judicial Process . . . . . 3 credits
CJ 130 Introduction to Corrections . . . . . 3 credits
CJ 111 Concepts of Enforcement Services . . . . . 4 credits
CJ 200 Introduction to Community Relations . . . . . 3 credits
CJ 222 Procedural Law. . . . . 3 credits
CJ 223 Rules of Evidence. . . . . 3 credits
CJ 220 Introduction to Substantive Law . . . . . 3 credits
CJ 226 Constitutional Law. . . . . 3 credits
CJ 227 Civil Liberties . . . . . 3 credits
Ec 115 Outlines of Economics . . . . . 4 credits
2.330 Outlines of Economics. . . . . 3 credits
Ec 201, 202, 203 Principles of Economics . . . . . 3 credits each
Ec 215/2.331 Economic Development of the United States . . . . . 3 credits each
Ec 220/2.332 Contemporary United States Economic Issues . . . . . 3 credits each
Geog 105, 106, 107 Introductory Geography. . . . . 3 credits each
Hst 101, 102, 103 History of Western Civilization . . . . . 3 credits each
Hst 201, 202, 203 History of the United States . . . . . 3 credits each
Phl 201, 202, 203 Philosophy . . . . . 3 credits each
PS 201, 202, 203 American Governments . . . . . 3 credits each
PS 205 International Relations . . . . . 4 credits
Psy 101 Psychology of Human Relations . . . . . 3 credits
Psy 201, 202, 203 General Psychology . . . . . 3 credits each
Psy 205, Applied Psychology . . . . . 3 credits
R 201, 202, 203 Great Religions of the World . . . . 3 credits each
Soc 204, 205, 206 General Sociology . . . . . 3 credits each
Soc 207 Juvenile Delinquency. . . . . 3 credits
SSc 104, 105, 106 Introduction to Social Science . . . . . 3 credits each

SCIENCE AND MATHEMATICS

Courses which meet the general education math or science requirement of six credit hours:

2.508, 2.509 Business Mathematics I,II . . . . . 4 credits each
2.531, 2.533, 2.550 General Accounting I, II, III . . . . . 3 credits each
4.200, 4.202, 4.204 Practical Mathematics. . . . . 3 credits each
4.240, 4.242 Applied Basic Algebra I, II . . . . . 3 credits each
BA 211, 212, 213 Principles of Accounting I,II,III . 3 credits each
Bi 101, 102, 103 General Biology . . . . . 4 credits each
Bot 201, 202, 203 General Botany. . . . . 4 credits each
Ch 101, 102, 103 General Chemistry . . . . . 4 credits each
Ch 104, 105, 106 General Chemistry . . . . . 5 credits each
Ch 201, 202, 203 General Chemistry . . . . . 4 credits each
G 201, 202, 203 Geology . . . . . 3 credits each
G 204, 205, 206 Geology Laboratory . . . . . 1 credit each
GS 104, 105, 106 Physical Science. . . . . 4 credits each
Mth 10 Basic Algebra . . . . . 3 credits
Mth 95, 101, 102 Algebra and Trigonometry . . . . . 4 credits each
Mth 103 Probability and Statistics . . . . . 4 credits
Mth 106 Elementary Calculus . . . . . 4 credits
Mth 161, 162, 163 Math for Business Management and Social Sciences . . . . . 4 credits each
Mth 191, 192, 193 Math for Elementary Teachers. . . . . 3 credits each
Mth 200, 201, 202, 203 Calculus with Analytic Geometry . . . . . 4 credits each
Mth 221 Applied Differential Equations . . . . . 4 credits
Mth 233 Introduction to Numerical Computation-FORTRAN . . . . . 4 credits
Ph 201, 202, 203 General Physics. . . . . 4 credits each
Ph 207, 208, 209 Introductory Classical Physics . . . . . 4 credits each
Z 201, 202, 203 General Zoology. . . . . 4 credits each

COOPERATIVE EDUCATION PROGRAM

This program provides practical experience in the student's career area. Participation may be in one of four programs: Exploratory, General, Cooperative Work Experience, and Supervised Field Experience. The coordinator evaluates student performance by visits to the job site, consultation with employer and student, and reports placed in student's files. At the termination of the work period, each student submits a summary of the educational value of the job experience and classwork.

CREDIT

The amount of credit received is determined by the work experience director and the student's departmental adviser, according to the type of work and amount of time required by the specific work program. A maximum of 24 credits for work experience is allowed for an associate degree. No more than 11 work experience credits per quarter are accepted. Credits earned in Job Search Techniques are not included in the maximum of 24 credits for work experience; however, students are required to complete a one credit Job Search Techniques class no later than their first on-campus term of the regular academic year.

ENROLLMENT

Students may enroll in work experience by following the regular college enrollment procedure plus an interview with the work experience director. Cooperative Work Experience is not normally open to freshmen. Exploratory Work Experience may be part of the freshman year's work. Supervised Field Experience is usually reserved for transfer students. If approved, vocational work experience is available for a maximum of 24 credits, and transfer field experience and cooperative education for a maximum of 18 credits.

Number	Area	Credits Per Term
2.280	Business	1-11
3.280	Maritime Science	1-11
4.280	Industrial Mechanics	1-11
5.280	Criminal Justice	1-11
6.280	Engineering, Electronics, Drafting	1-11
7.280	Early Childhood Education	1-11
8.280	Agriculture, Forestry	1-11
SFE 280	Supervised Field Experience (transfer-includes seminar)	2-12
OA 280	Cooperative Education: Secretarial (transfer)	1-11

JOB SEARCH TECHNIQUES

Provides the student with a job-seeking process rather than supplying resources which introduce hopeful employee to potential employer. Since the process itself is understood and practiced by the student, each person becomes capable of adapting it to meet changing times and new requirements.

The sequence is broken into three one-term sections, each leading the student through various steps of the job-seeking technique. Although three separate sections are taught, the student need not have taken one to enroll in the others. Maximum effectiveness will be achieved by enrolling in all three courses in sequence.

Skill Analysis (.281) This section asks the student "What skills do you have?" and "To what jobs are they applicable?" It also includes vocational preference testing, skill analysis methods, and individual and group counseling in analysis of skill clusters.

Placement (.282) The question addressed is "Where are these skills to be used to my advantage?" The major thrust is to connect skills and occupations with regard to desired environment, geographical location, and types of business or industry.

Application Techniques (.283) The last of the series emphasizes the practical aspect of techniques involved in obtaining a job. Included here are application letters, resume writing, and interview practice. Speakers from industry are participants in several meetings.

Although the major emphasis is different each term, all terms include self and skill analysis, testing and interpretation, and interview practice.

Course Number	Job Search Technique Area	Credits
2.281,2.282,2,283	Business	1 Each
3.281,3.282,3.283	Maritime Science	1 Each
4.281,4.282,4.283	Industrial Mechanics	1 Each
5.281,5.282,5.283	Criminal Justice	1 Each
6.281,6.282,6.283	Engineering,Electronics, Drafting	1 Each
7.281,7.282,7.283	Early Childhood Education	1 Each
8.281,8.282,8.283	Agriculture,Forestry	1 Each

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Business Programs

The Business Department offers training to recent high school graduates, to students under various government training programs, to employed business people who wish to update or develop new skills, and to those who wish to take business courses for their own enjoyment and satisfaction.

In the vocational area, an Associate in Science degree is awarded to students who successfully complete a two-year curriculum in any of the following areas: Accounting, Business Management, Data Processing/Accounting, General Office, and Secretarial. These two-year, non-transfer programs prepare students to go directly into business.

Complete two-year college transfer programs are offered in Business Administration, Business Education, Distributive Education, and Administrative Office Management (Secretarial Science). Over twenty different business transfer courses are taught. These courses will transfer to any accredited four-year institution. A total of 108 credits may be transferred. An associate degree is awarded to those students who successfully complete the prescribed two-year program.

Students may also combine any of the courses in both the vocational and transfer programs and earn an Associate in General Studies Degree. Ninety credits are required.

Diploma programs are available in all of the five areas for those who desire only one year of training.

Individualized instruction is stressed in many of the business subjects. The department also works closely with local high schools. Students who have had previous business training are evaluated and placed in advanced courses.

The College and the department work diligently to place their graduates. Those with associate degrees or diplomas have enjoyed considerable success in placement during the past few years. Continual placement services are offered to our students.

ACCOUNTING

The accounting program gives the student an excellent background in accounting and in general business. A person who has this training should be qualified to work as a junior accountant or as a bookkeeper in a private firm. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
	Mathematics*	3	3	
2.300	Introduction to Business or	3		
BA 101	Introduction to Business	(4)		
2.531,2.533,2.550	General Accounting I,II,III	3	3	3
BA 214	Business Communications			3
OA 220	Business Machines		3	
Wr 121,122	English Composition or	3	3	
2.524,2.525	Business Correspondence I,II	(3)	(3)	
HE 250/HE252/ 5.213	Health or First Aid			3
BA 226	Business Law	3		
2.321	Business Law II		3	
2.553	Accounting: Payroll			3
	Technical electives			3

Second Year

BA 131	Introduction to Business Data Processing	4		
BA 211,212,213	Principles of Accounting I,II,III	3	3	3
2.552	Accounting: Income Tax	3		
2.557	Credit Procedures		3	
BA 222	Finance		3	
BA 232	Introduction to Business Statistics or			4
2.327	Introduction to Business Statistics			(3)
Ec 201.202,203	Principles of Economics or Social science electives	3	3	(3)
PE 185	Physical Education			1
	Technical electives	3	3	6

Technical Electives
(Students must complete 15 of the credits listed.)

		Credits
2.322	Business Law III	3
2.324	Auditing	3
2.281,2.282,2.283	Job Search Techniques Seminars	1 each
2.406	Business Project Study	1-15
2.564,2.566	Fund Accounting I,II	3 each
2.568,2.569,2.570	Business Management I,II,III	3 each
2.572,2.574,2.576	Supervision I,II,III	3 each
OA 121	Typing I	3
EC 115	Outlines of Economics	4
2.330	Outlines of Economics	3
2.331/Ec 215	Economic Development of the United States	3 each
2.332/Ec 220	Contemporary United States Economic Issues	3 each
OA 240	Filing and Records Management	3

Recommended Electives

BA 218	Personal/Family Finance	3
SFE 280	Supervised Field Experience	2-18
2.280	Cooperative Work Experience	1-24

*Students must achieve a mathematics proficiency through 4.200 Practical Mathematics. Contact your adviser.

BUSINESS MANAGEMENT

Business Management prepares the student for supervisory and managerial careers.

The major emphasis in this curriculum includes a basic knowledge of modern day business operations, organizations, and management concepts. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
2.300	Introduction to Business or	3		
BA 101	Introduction to Business	(4)		
OA 125,2.508, 2.509	Math for the Office/ Business Math I,II*	3	4	
2.524	Business Correspondence I or	3		
Wr 121	English Composition	(3)		
BA 226	Business Law	3		
2.321	Business Law II		3	
BA 238	Sales			3
PE 185	Physical Education		1	
BA 214	Business Communications			3
BA 131	Introduction to Business Data Processing			4
HE 250/HE252/ 5.213	Health or First Aid		3	
	Technical electives	3	3	3
	Electives		3	3

Second Year

2.568,2.569,2.570	Business Management I,II,III or	3	3	3
2.572,2.574,2.576	Supervision I,II,III**	(3)	(3)	(3)
Ec 201,202,203	Principles of Economics or Social science electives	3	3	(3)
BA 211,212,213	Principles of Accounting I, II, III or	3	3	3
2.531,2.533,2.550	General Accounting I,II,III	(3)	(3)	(3)
BA 223	Principles of Marketing			3
	Technical electives	3	3	
	Electives	3	3	3

*Students must achieve a math proficiency through 2.509 Business Mathematics II. Contact your adviser.

**Students may take a combination of business management and supervision courses.

Technical Electives

(Students must complete 15 of the credits listed)

		Credits
OA 121	Typing I	3
BA 239/2.308	Advertising	3 each
2.552	Accounting: Income Tax	3
2.553	Accounting: Payroll	3
BA 232	Introduction to Business Statistics	4
OA 240	Filing and Records Management	3
2.322	Business Law III	3
2.557	Credit Procedures	3
2.568,2.569,2.570	Business Management I,II,III	3 each
2.572,2.574,2.576	Supervision I,II,II	3 each
BA 222	Finance	3
BA 265/2.582	Real Estate Office Management	3
BA 266/2.584	Real Estate Supervision of Sales Personnel	3
BA 288/2.588	Real Estate Finance I	3
BA 287/2.586	Real Estate Law I	3
BA 264/2.580	Real Estate Practice	3
EC 115	Outlines of Economics	4
2.330	Outlines of Economics	3
2.331/Ec 215	Economic Development of the United States	3 each
2.332/Ec 220	Contemporary United States Economic Issues	3 each
9.261	Money and Banking	4
9.262	Principles of Banking	3
9.263	International Banking	3
9.264	Installment Credit	3
9.274	Real Estate Appraisal I	3
9.275	Real Estate Appraisal II	3

Recommended Electives

BA 218	Personal/Family Finance	3
SP 111,112,113	Fundamentals of Speech	3 each
OA 220	Business Machines	3

DATA PROCESSING/ACCOUNTING

The Data Processing/Accounting program provides training for individuals who intend to enter the field of business data processing. The curriculum offers study and experience in business data processing, computer programing, accounting, and related problem-solving procedures. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
2.122	Programing-RPG I		3	
2.124	Programing-Advanced RPG or			3
2.406	Business Project Study			(3)
2.524, 2.525	Business Correspondence I,II or	3	3	
Wr 121,122	English Composition	(3)	(3)	
BA 131	Introduction to Business Data Processing	4		
2.531,2.533,2.550	General Accounting I,II,III	3	3	3
2.553	Accounting: Payroll			3
BA 214	Business Communications			3
OA 220/2.521	Business Machines	3		
PE 185	Physical Education			1
	Mathematics (by placement)*	3	3	
HE 250/HE252/ 5.213	Health or First Aid		3	
	Technical elective			3

Second Year

BA 231	Business Data Processing - COBOL I	4		
2.128	Business Data Processing - COBOL II or		3	
2.406	Business Project Study		(3)	
2.552	Accounting: Income Tax	3		
BA 211,212,213	Principles of Accounting I, II, III	3	3	3
BA 101	Introduction to Business or	4		
2.300	Introduction to Business	(3)		
Ec 201,202,203	Principles of Economics or Social science electives	3	3	(3)
Mth 233	Introduction to Numerical Computation-FORTRAN or			4
2.406	Business Project Study			(4)
	Technical electives		3	3
	Electives		1-3	3

Technical Electives
(Students must complete 9 of the credits listed)

Course Number	Course Title	Credits
2.572,2.574, 2.576	Supervision I,II,III	3 each
2.568,2.569,2.570	Business Management I,II,III	3 each
OA 121	Typing I	3
2.107	Keypunch I	3
2.108	Keypunch II	3
BA 232	Introduction to Business Statistics	4
2.327	Introduction to Business Statistics	3
2.557	Credit Procedures	3
EC 115	Outlines of Economics	4
2.330	Outlines of Economics	3
2.331/Ec 215	Economic Development of the United States	3 each
2.332/Ec 220	Contemporary United States Economic Issues	3 each

Recommended Electives

2.280	Cooperative Work Experience	1-24
SFE 280	Supervised Field Experience	2-18

*Students must achieve a minimum math proficiency through 4.200 Practical Mathematics. Contact your adviser.

ONE-YEAR KEYPUNCH/DATA PROCESSING DIPLOMA PROGRAM

The keypunch curriculum is designed for students who desire employment as keypunch operators. The student will study data processing requirements and will learn how to punch cards for the various data processing programs. See Special Note page 28.

Course Number	Course Title	Credits F	W	S
2.107,2.108	Keypunch I,II**		3	3
BA 131	Introduction to Business Data Processing	4		
	Mathematics (by placement)*	3		
2.524, 2.525	Business Correspondence I,II	3	3	
BA 214	Business Communications			3
2.531	General Accounting I		3	
2.122	Programing-RPG I or		3	
Mth 233	Introduction to Numerical Computation-FORTRAN or			(4)
BA 231	Business Data Processing - COBOL I or	(4)		
2.521	Business Machines II		(3)	
2.283	Job Search Techniques Seminars			1
OA 220	Business Machines	3		
	Technical electives			6

*Students must achieve a minimum math proficiency through 4.200 Practical Mathematics. Contact your adviser.

**Prerequisite: OA 121 Typing I or consent of instructor.

Technical Electives
(Students must complete 6 of the credits listed)

Course Number	Course Title	Credits
OA 121,122, 123,124	Typing I,II,III,IV (by placement)	3 each
2.533	General Accounting II	3
BA 101	Introduction to Business or	4
2.300	Introduction to Business	(3)
BA 218	Personal/Family Finance	3
2.315	Personal Development	2
2.124	Programing - Advanced RPG	3
BA 231	Business Data Processing - COBOL I	4
Mth 233	Introduction to Numerical Computation-FORTRAN	4
2.508,2.509	Business Math I,II	4 each
OA 125	Math for the Office	3
2.122	Programing-RPG I	3
EC 115	Outlines of Economics	4
2.330	Outlines of Economics	3
2.331/Ec 215	Economic Development of the United States	3 each
2.332/Ec 220	Contemporary United States Economic Issues	3 each

GENERAL OFFICE

The General Office curriculum provides training in accounting, typing, and general office work. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
2.508	Business Math I or	4		
OA 125	Math for the Office	(3)		
2.512,2.514	Office Procedures I,II*/**		3	4
OA 220	Business Machines			3
2.524,2.525	Business Correspondence I,II or	3	3	
Wr 121,122	English Composition	(3)	(3)	
OA 240	Filing and Records Management	3		
BA 211,212,213	Principles of Accounting I,II,III or	3	3	3
2.531,2.533,2.550	General Accounting I,II,III	(3)	(3)	(3)
BA 214	Business Communications			3
OA 121,122,123	Typing I,II,III (by placement)***	3	3	3
2.522	Transcription (Word Processing)		3	

Second Year

2.300	Introduction to Business	3		
BA 226	Business Law	3		
2.530,2.532,2.534	Advanced Office Practice I,II,III****/**		3	3
2.553	Accounting: Payroll			3
2.552	Accounting: Income Tax	3		
Ec 201,202	Principles of Economics or Social science elective	3 (3)	3 (3)	
HE 250/HE 252/ 5.213	Health or First Aid		3	
BA 131	Introduction to Business Data Processing			4
PE 185	Physical Education		1	
Sp 111/112/113	Fundamentals of Speech			3
	Electives	3	3	3

Recommended Electives

		Credits
BA 222	Finance	3
OA 111,112,113	Shorthand	3 each
OA 280	Cooperative Education: Secretarial	1-18
SFE 280	Supervised Field Experience	2-18
2.315	Personal Development	2
2.321,2.322	Business Law II,III	3 each
2.800	Cooperative Work Experience	1-24
2.406	Business Project Study	1-15
2.521	Business Machines II	3
2.530	Advanced Office Practice I	3
2.538	Advanced Transcription	3
2.539	Legal Transcription	3
2.540	Medical Transcription I	3
2.542	Medical Transcription II	3
2.557	Credit Procedures	3
2.572,2.574,2.576	Supervision I,II,III	3 each

*Students who have prior office experience or who have had office procedure in high school may substitute 2.534 Advanced Office Practice III, and either 2.530 Advanced Office Practice I or 2.532 Advanced Office Practice II for 2.512 and 2.514 Office Procedures I, II with instructor approval.

**2.535 Basic Legal Terminology may be substituted for 2.514 Office Procedures II, or 2.530 Advanced Office Practice I, or 2.532 Advanced Office Practice II.

***Students must achieve a typing proficiency through the level of OA 123.

****Students must complete 2.534 Advanced Office Practice III and either 2.530 Advanced Office Practice I or 2.532 Advanced Office Practice II.

ONE-YEAR CLERICAL DIPLOMA PROGRAM

Course Number	Course Title	Credits F	W	S
2.508	Business Math I or	4		
OA 125	Math for the Office	(3)		
2.512,2.514	Office Procedures I,II*/**		3	4
OA 220	Business Machines			3
2.524,2.525	Business Correspondence I, II or	3	3	
Wr 121,122	English Composition	(3)	(3)	
OA 240	Filing and Records Management	3		
BA 211,212,213	Principles of Accounting I,II,III or	3	3	3
2.531,2.533,2.550	General Accounting I,II,III	(3)	(3)	(3)
BA 214	Business Communications			3
OA 121,122,123	Typing I,II,III (by placement)***	3	3	3
2.522	Transcription (Word Processing)		3	

*Students who have prior office experience or who have had office procedure in high school may substitute 2.534 Advanced Office Practice III and either 2.530 Advanced Office Practice I or 2.532 Advanced Office Practice II for 2.512 and 2.514 Office Procedures I, II with instructor approval.

**2.535 Basic Legal Terminology may be substituted for 2.514 Office Procedures II, or 2.530 Advanced Office Practice I, or 2.532 Advanced Office Practice II.

***Students must achieve a typing proficiency through the level of OA 123.

SECRETARIAL

The secretarial profession is interesting and rewarding. There is constant demand for competent secretaries in all phases of business. Students trained in this area will be employable in the business, medical, or legal fields. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
2.508	Business Math I or	4		
OA 125	Math for the Office	(3)		
2.512,2.514	Office Procedures I,II*		3	4
2.522	Transcription (Word Processing)		3	
2.524,2.525	Business Correspondence I, II, or	3	3	
Wr 121,122	English Composition	(3)	(3)	
BA 214	Business Communications			3
OA 220	Business Machines			3
OA 240	Filing and Records Management	3		
OA 121,122, 123,124	Typing I,II,III,IV (by placement)***	3	3	3
OA 111,112,113	Shorthand	3	3	3

Second Year

BA 226	Business Law	3		
BA 211	Principles of Accounting I or	3		
2.531	General Accounting I	(3)		
Ec 201,202	Principles of Economics or	3	3	
	Social science elective	(3)	(3)	
OA 211,212,213	Applied Shorthand	3	3	3
BA 131	Introduction to Business Data Processing			4
2.530,2.532,2.534	Advanced Office Practice I,II,III****/**		3	3
Sp 111/112/113	Fundamentals of Speech		3	
HE 250/HE 252/ 5.213	Health or First Aid			3
PE 185	Physical Education			1
	Electives	3	3	3

Recommended Electives

		Credits
Ec 203	Principles of Economics	3
OA 280	Cooperative Education: Secretarial	1-18
SFE 280	Supervised Field Experience	2-18
2.107	Keypunch I	3
2.300	Introduction to Business	3
2.315	Personal Development	2
2.321.2.322	Business Law II,III	3 each
2.280	Cooperative Work Experience	1-24
2.406	Business Project Study	1-15
2.538	Advanced Transcription	3
2.539	Legal Transcription	3
2.540.2.542	Medical Transcription I,II	3 each
2.557	Credit Procedures	3
2.572,2.574.2.576	Supervision I,II.III	3 each

*Students who have prior office experience or who have had office procedure in high school may substitute 2.534 Advanced Office Practice III and either 2.530 Advanced Office Practice I or 2.532 Advanced Office Practice II for 2.512 and 2.514 Office Procedures I, II, with instructor approval.

**2.535 Basic Legal Terminology may be substituted for 2.514 Office Procedures II, or 2.530 Advanced Office Practice I, or 2.532 Advanced Office Practice II.

***Students must achieve a typing proficiency through the level of OA 123.

****Students must complete 2.534 Advanced Office Practice III and either 2.530 Advanced Office Practice I or 2.532 Advanced Office Practice II.

ONE-YEAR SECRETARIAL DIPLOMA PROGRAM

Course Number	Course Title	Credits F	W	S
2.508	Business Math I or	4		
OA 125	Math for the Office	(3)		
2.512,2.514	Office Procedures I,II*/**		3	4
2.522	Transcription (Word Processing)		3	
2.524,2.525	Business Correspondence I,II or	3	3	
Wr 121,122	English Composition	(3)	(3)	
BA 214	Business Communications			3
OA 220	Business Machines			3
OA 240	Filing and Records Management	3		
OA 121,122, 123,124	Typing I,II,III,IV (by placement)***	3	3	3
OA 111,112,113	Shorthand or	3	3	3
2.538	Advanced Transcription and an elective and either			(3)
2.539	Legal Transcription or			(3)
2.540	Medical Transcription I or		(3)	
2.541	Medical Transcription II****	(3)		

*Students who have prior office experience or who have had office procedure in high school may substitute 2.534 Advanced Office Practice III and either 2.530 Advanced Office Practice I or 2.532 Advanced Office Practice II for 2.512 and 2.514 Office Procedures I, II with instructor approval.

**2.535 Basic Legal Terminology may be substituted for 2.514 Office Procedures II, or 2.530 Advanced Office Practice I, or 2.532 Advanced Office Practice II.

***Students must achieve a typing proficiency through the level of OA 123.

****See the listing of electives under the two-year secretarial program.

Crafts & Industrial Trades

To qualify for the following program, students must be:
1. Indentured in apprentice programs, or
2. Journeymen who have completed a registered program, or
3. Journeymen who have not completed a registered program, but are recognized as Journeymen by a current State license or the Crafts and Industrial Trades Advisory Committee.

An Associate in Science degree will be awarded when all program requirements have been satisfied.

Requirements	Credits
General Education*	
Communications Skills	6
Math or Science	6
Humanities or Social Science	6
HE 250 Health or HE 252 First Aid or 5.213 Advanced First Aid	3
PE 185 Physical Education	1
Trade Competency**	45
Related Classroom Training***	27
Total	94

*Courses listed on page 29 of this catalog may be taken to satisfy General Education requirements.

Credits earned as General Education may not be used to satisfy the 27 credits of related classroom training and vice versa.

**Awarded upon completion of General Education requirements and advancement to or attainment of Journeyman status.

***Total credits will vary with length of program, i.e., Powerlineman which is three years, to Plumber which is a four-year program.

Persons wishing additional detailed information on this program should contact the Director of Adult and Community Education or the Director of Vocational-Technical Education.

Criminal Justice

The Criminal Justice curriculum offers an educational program designed to prepare the student with the fundamental knowledge for a career within an agency of the criminal justice system.

Students interested in becoming police officers, juvenile workers, court workers, probation and parole officers or correctional officers will benefit from this program. Persons interested in a police career must become employed by a police agency and complete the curriculum of the Oregon Police Academy before they can be certified. Students desiring positions with juvenile or adult probation and parole agencies are encouraged to continue their education toward a baccalaureate degree. Students who plan to further their education beyond the two-year level may design a program which will allow them to transfer with the maximum number of credits.

By selecting the proper electives, a student may also be able to specialize within either the enforcement or correctional component of the criminal justice system.

Those persons who meet and maintain physical, emotional, intellectual, citizenship and moral standards are eligible for the Criminal Justice program. For acceptance as a Criminal Justice major, students must be fingerprinted and complete a biographical questionnaire. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
Wr 121/1.100/ Wr 122/1.102/ BA 214/2.524/ 2.525	Communications	3	3	
HE 250/HE 252/ 5.213	Health or First Aid			3
	Mathematics or science*	3-4	3-4	
Sp 111/112/113	Fundamentals of Speech	3	3	
CJ 100	Survey of the Criminal Justice System	3		
CJ 110	Introduction to Law Enforcement		3	
CJ 120	Introduction to the Judicial Process			3
CJ 210	Introduction to Criminal Investigation			3
CJ 220	Introduction to Substantive Law		3	
	Electives**	3		6

Second Year

Psy/Soc SSc/PS	Social science elective	3	3	
PE 185	Physical Education			1
CJ 222	Introduction to Procedural Law	3		
CJ 223	Rules of Evidence		3	
CJ 140	Introduction to Criminalistics		4	
CJ 130	Introduction to Corrections	3		
Soc 207	Juvenile Delinquency			3
	Technical electives	6	6	6
	Electives**			4

*Students must achieve a mathematics proficiency through the level of 4.200 Practical Mathematics. Consult your adviser.

**Student choices should be discussed with adviser.

TECHNICAL ELECTIVES

(Students must complete 18 of the credits listed. Not all courses will be offered in any one year.)

		Credits
5.204,5.206	Defensive Tactics	1 each
5.210	Traffic Control	3
5.217	Criminal Investigation II	3
5.218	Personal Identification Techniques	4
5.220	Patrol Procedures I	3
5.221	Patrol Procedures II	3
5.222	Patrol Administration	3
5.226	Firearms and Chemical Agents	3
5.227	Advanced Firearms	1
5.232	Jail Procedures	2
5.239	Record Systems	3
5.240	Police Report Writing	3
5.241	Crime Scene Procedures	4
5.242	Criminalistics II	4
5.244	Police Organization	3
5.246	Management Techniques	3
CJ 200	Introduction to Community Relations	3
CJ 111	Concepts of Enforcement Services	4
CJ 226	Introduction to Constitutional Law	3
CJ 227	Civil Liberties	3
CJ 199	Special Problems in Criminal Justice	1-4
HE 260	Crash Injury Management	3
Psy 205	Applied Psychology	3
CJ 101	Introduction to Criminology	3
CJ 215	Criminal Justice Administration	3
CJ 216	Criminal Justice Management	3
CJ 217	Criminal Justice Supervision	3

Dairy & Livestock Technology

Provides skills and knowledge required in dairy and livestock production and related industries. Through the selection of electives the student is able to develop a training program to meet individual career goals.

Graduating students have entered productive enterprises of their own or have found employment in livestock and dairy production, feed industry, agribusiness, artificial insemination, and related fields.

All students have a common first year course of study. During the second year, students may elect to emphasize Dairy or Livestock Technology.

Required courses in one emphasis may serve as electives in the other. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
8.208	Soils			3
8.212	Animal Anatomy and Physiology	4		
8.213	Feeds and Feeding		4	
8.214	Diseases and Parasites of Domestic Animals			4
8.226	Forage Production and Utilization			3
8.240	Crop Production	3		
8.246	Introduction to Animal Science	3		
8.281/8.282/ 8.283	Job Search Techniques Seminars			1
HE 250/HE 252 5.213	Health or First Aid		3	
Wr 121/1.100	Communications		3	
Wr 122/1.102	Communications			3
	Mathematics or Science (by placement)*	3-4	3-4	
	Electives	3		2
	Technical electives		3	

*Students must achieve a math proficiency through the level of 4.202 Practical Mathematics. Contact your adviser.

DAIRY EMPHASIS

Second Year

Course Number	Course Title	Credits F	W	S
8.200	Milking and Milk Machines		3	
8.201	Milking and Milk Machines Lab*	1	(1)	(1)
8.216	Artificial Insemination		3	
8.224	Farm Business Management			4
8.225	Dairy Management			4
8.235/8.236/ 8.237	Farm Construction and Design I, II, III**	2	2	(2)
8.330	Dairy Cattle Production	4		
4.168	Agriculture Welding			3
PE 185	Physical Education	1		
	Social science electives	3	3	
	Technical electives	3	3	6

*Each student will be required to complete 1 credit during Fall, Winter, or Spring terms.

**Each student must complete 4 credits during Fall, Winter, or Spring terms.

LIVESTOCK EMPHASIS

Second Year

Course Number	Course Title	Credits F	W	S
8.224	Farm Business Management			4
8.227	Livestock Management	4		
8.235/8.236/ 8.237	Farm Construction and Design I,II,III*	2	(2)	2
8.332	Beef Production			4
8.334	Swine Production		4	
8.336	Sheep Production		4	
4.168	Agriculture Welding			3
PE 185	Physical Education	1		
	Social science electives	3	3	
	Technical electives	6	3	3

*Each student must complete four credits during Fall, Winter, or Spring terms.

TECHNICAL ELECTIVES (EITHER EMPHASIS)

(Students must complete 15 of the credits listed. Not all courses will be offered in any one year.)

		Credits
2.531	General Accounting I	3
2.557	Credit Procedures	3
4.169	Advanced Agriculture Welding	1-3
3.360	Power Systems	2
8.206	Farm Mechanics	3
8.216	Artificial Insemination*	3
8.244	Livestock Judging	3
8.245	Dairy Judging	3
8.250	Fundamentals of Meats and Meatcutting	3
8.260	Special Projects in Livestock Technology	1-4
8.222	Introduction to Agriculture Economics	3
8.270	Special Projects in Dairy Technology	1-4
8.338	Introduction to Small Farm Animal Production	2
8.280	Cooperative Work Experience	1-5
BA 238	Sales	3
OA 220	Business Machines	3
2.321	Business Law II	3

*Livestock Emphasis students only.

Early Childhood Education

The Early Childhood Education program offers an opportunity for students to learn more about young children through classroom work, augmented by observation and participation in child care centers. Trends, both in the Pacific Northwest and the nation, indicate increasing employment for persons trained in child development. Graduates may find employment in nursery schools, Head Start centers, day care centers, and as paraprofessionals in public schools.

The curriculum consists of a two-year associate degree program and a one-year diploma program. Technical courses are taught on campus, and laboratories are conducted in the College's child care center. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
7.500	Introduction to Early Childhood Education	3		
7.502	Children's Music-Children's Literature	3		
7.511	Directed Experiences I		5	
7.512	Directed Experiences II			6
7.520	Creative Activities		3	
7.530	Nutrition and Health Needs for the Young Child			3
7.540	Observing and Modifying Behavior		4	
7.541	Home-School-Community Relations			3
Psy 101	Psychology of Human Relations	3		
FL 225	Child Development	3		
HE 252/5.213	First Aid		3	
PE 185	Physical Education		1	
Wr 121/1.100/ 2.524	Communications or Business Correspondence I	3		
	Mathematics or Science*			3-4

Second Year

Course Number	Course Title	Credits F	W	S
7.504	Child Care and Guidance		3	
7.506	The Exceptional Child			3
7.513	Directed Experiences III	6		
7.514	Supervised Field Experience-Early Childhood Education			9
7.521	Environments for Young Children		3	
7.522	Learning Experiences for Young Children	3		
7.523	Administration of Child Care Centers			3
FL 240	Contemporary American Family		3	
Wr 122/1.102/ 2.525	Communications or Business Correspondence II		3	
	Social science electives	3	3	
	Mathematics or science*	3-4		

Recommended Electives

Course Number	Course Title	Credits
7.280	Cooperative Work Experience	1-24
7.281,7.282, 7.283	Job Search Techniques Seminars	1 each
2.315	Personal Development	2
FN 225	Nutrition	4
Mus 101	Music Fundamentals	3
Sp 111, 112, 113	Fundamentals of Speech	3 each
Psy 201, 202, 203	General Psychology	3 each
Psy 205	Applied Psychology	3

*Students must achieve a mathematics proficiency through 2.509 Business Mathematics II or 4.202 Practical Mathematics. Consult your adviser.

ONE-YEAR EARLY CHILDHOOD EDUCATION DIPLOMA PROGRAM

Course Number	Course Title	Credits F	W	S
7.500	Introduction to Early Childhood Education	3		
7.502	Children's Music-Children's Literature	3		
7.511	Directed Experiences I		5	
7.512	Directed Experiences II			6
7.520	Creative Activities		3	
7.530	Nutrition and Health Needs for the Young Child			3
7.540	Observing and Modifying Behavior	4		
7.541	Home-School-Community Relations			3
Psy 101	Psychology of Human Relations	3		
FL 225	Child Development		3	
HE 252/5.213	First Aid		3	
PE 185	Physical Education		1	
Wr 121/1.100/ 2.524	Communications or Business Correspondence I	3		
	Elective			3

Engineering Technology Programs

CIVIL ENGINEERING TECHNOLOGY

This program prepares individuals for entry-level employment as inspectors or technical engineers in construction; as mappers and planners, land-use and environmental technicians and inspectors, water-use planners and inspectors, and property surveyors with both private and public agencies.

Students can enter the program any term of the school year. The curriculum normally takes two years to complete.

Many students like to start at Clatsop Community College to develop their basic technical engineering skills before entering a four-year technical engineering program. Technical colleges, like Oregon Institute of Technology, accept Clatsop's two-year program, allowing students to enter with junior standing. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
4.101	Drafting I	2		
4.102	Introduction to Specifications			3
4.110	Construction Standards and Building Inspection		2	
4.200,4.202,4.204	Practical Mathematics (or by placement)*	3-4	3-4	3-4
6.101,6.103,6.105	Plane Surveying I,II,III	4	4	4
6.108	Evidence and Procedure for Boundary Location		4	
6.137	Computation Methods I	1		
Wr 121/1.100	Communications	3		
Wr 122/1.102	Communications		3	
PE 185	Physical Education			1
HE 250/HE 252/ 5.213	Health or First Aid			3
	Elective	3		

Second Year

Course Number	Course Title	Credits F	W	S
4.111	Statics and Strengths of Materials			3
4.112	Photo Interpretation and Mapping	4		
4.124	Drafting V (Architectural)		3	
4.129	Road and Highway Design	4		
4.131	Mapping and Platting		3	
4.133	Industrial and Marine Construction Practices			3
4.134	Cost Estimating		2	
Ph 201,202	General Physics	4	4	
3.321	Hydraulic and Pneumatic Systems I			3
	Elective	3		6
	Social science electives	3	3	

Recommended Electives

Course Number	Course Title	Credits
8.108	Forest Soils	4
8.120	Forest Operations	3
8.129	Recreational Facilities	3
6.280	Cooperative Work Experience	1-24
6.281,6.282 6.283	Job Search Techniques Seminars	1 each
Ch 104,105,106	General Chemistry	5 each
G 201,202,203	Geology	3 each
G 204,205,206	Geology Lab	1 each
Mth 101	College Algebra	4
Mth 102	Trigonometry	4
Mth 200	Calculus with Analytic Geometry	4

*Students must achieve a mathematics proficiency through the level of 4.204 Practical Mathematics. Contact your adviser.

DRAFTING TECHNOLOGY

The drafting technology courses train the student to prepare assembly, detail, and working drawings relative to the mechanical engineering profession. Included are courses in architectural drawing and technical illustration.

Individuals completing this curriculum should be able to enter and readily adapt to rapidly changing fields such as mechanical and engineering drafting. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
3.339	Blueprint Reading and Sketching	3		
3.347	Advanced Blueprint Reading		3	
3.380,3.381	Machine Tools I,II	3	3	
4.101,4.117,4.119	Drafting I,II,III	2	3	3
4.102	Introduction to Specifications			3
4.150	Beginning Welding Practices	3		
HE 250/HE 252/ 5.213	Health or First Aid			3
	Social science elective			3
4.200,4.202	Practical Mathematics*	3-4	3-4	
	Electives	1-3		3

Second Year

Course Number	Course Title	Credits F	W	S
3.321	Hydraulic and Pneumatic Systems I			3
4.111	Statics and Strength of Materials			3
4.121,4.124,4.127	Drafting IV,V,VI	3	3	3
4.132	Housing Construction Practices			3
4.134	Cost Estimating		2	
6.101	Plane Surveying I	4		
6.137	Computation Methods I	1		
PE 185	Physical Education			1
	Social science elective		3	
Wr 121/1.100	Communications	3		
Wr 122/1.102	Communications		3	
	Electives	4	3	3

Recommended Electives

Course Number	Course Title	Credits
4.110	Construction Standards and Building Inspection	2
3.382	Machine Tools III	3
4.112	Photo Interpretation and Mapping	4
4.128	Drafting VII	1-3
4.129	Road and Highway Design	4
4.150	Beginning Welding Practices	3
6.103,6.105	Plane Surveying II,III	4 each
6.280	Cooperative Work Experience	1-24
6.281,6.282,6.283	Job Search Techniques Seminars	1 each

*Students must achieve a mathematics proficiency through the level of 4.202 Practical Mathematics. Contact your adviser.

ELECTRONICS TECHNOLOGY

This program provides the basic principles of electronic theory and the necessary lab skills needed for successful entry into the field of electronics. The training provides beginning electronics technicians with an opportunity to acquire a firm knowledge base from which they can easily gain insight and understanding of specialized areas of electronics technology.

Satisfactory completion of the two-year program prepares one for entry-level employment as an electronic lab technician, electronic instrument technician, industrial electronics technician, military and aerospace electronic technician, microwave radio technician and radio and TV technician.

The following two-year sequence leads to an Associate in Science degree. Provisions are made for transfer to certain four-year institutions offering a baccalaureate degree in Electronics Technology. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
6.150	Introduction to D.C. Circuit Analysis	4		
6.155	Introduction to A.C. Circuit Analysis		4	
6.160	Introduction to Solid State			4
6.170, 6.171 6.172	Electronic Bench Techniques I, II, III	4	4	4
Wr 121/1.100	Communications	3		
Wr 122/1.102	Communications		3	
Sp 111/112/ 113	Fundamentals of Speech			3
	Mathematics*	3	4	
4.103	Introduction to Electronics Drafting			3
	Social science electives	3		3

Second Year

6.300	Special Devices and Applications	4		
6.301	Solid State Linear Circuits		4	
6.302	Electromagnetic Fields and Waves			4
6.217	Discrete Logic Circuits	4		
6.218	Digital Integrated Circuits		4	
6.219	Digital Computer Electronics			4
HE 250/HE 252/ 5.213	Health or First Aid	3		
PE 185	Physical Education		1	
Mth 151	Programing Digital Computers			4
6.252,6.253,6.254	Advanced FCC License Preparation I,II,III or electives s	3	3	3

*Students must achieve a mathematics proficiency through Mth 95 Intermediate Algebra. Contact your adviser.

Recommended Electives

		Credits
3.380,3.381	Machine Tools I, II	3 each
4.150	Beginning Welding Practices	1-9
6.256	Television Equipment Operation	3
6.257	Radio Station Operator's Lab	3
6.258	Announcing Laboratory	3
6.259	Advanced Radio and Television Equipment Operation	1-3
6.280	Cooperative Work Experience	1-24
6.281,6.282, 6.283	Job Search Techniques Seminars	1 each
BA 131	Introduction to Business Data Processing	4
Ph 201,202,203	General Physics	4 each
6.303,6.304,6.305	Advanced Electronics IV, V, VI	1-3 each
3.515	Marine Electronics I	4
BA 231	Business Data Processing - COBOL I	4
BA 238	Sales	3
Ch 101,102,103	General Chemistry	4 each
2.531	General Accounting I	3
3.321	Hydraulic and Pneumatic Systems I	3
OA 121,122	Typing I,II	3 each

Forestry Technology

The Forestry Technology curriculum offers training toward technical skills in forest management or forest engineering, and helps those already in the industry to up-grade their skills for advancement. All students complete a common first year course of study. During the second year, students may elect to emphasize forest management or forest engineering.

The curriculum which leads to an Associate in Science degree has been developed with the assistance of advisory committees composed of representatives of both public and private forestry agencies and related industries. Courses are continuously up-dated to meet current technical knowledge.

Summer work experience is encouraged, and students are aided in securing both seasonal and career employment. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
4.101	Drafting I	2		
6.101,6.103,6.105	Plane Surveying I,II,III	4	4	4
8.100	General Forestry	3		
8.102	Tree Identification			3
8.108	Forest Soils			4
8.110	Fire Control		3	
8.114	Forestry Hand Tools and Safety	3		
Wr 121/1.100/	Communications		3	
Wr 122/1.102	Communications			3
	Mathematics (by placement)*	3-4	3-4	(3-4)
Sp 111	Fundamentals of Speech**		3	

*Students must achieve a mathematics proficiency through the level of 4.204 Practical Mathematics. Contact your adviser.

**Required of students electing a management emphasis program.

MANAGEMENT EMPHASIS

Technicians often assist the forest manager in inventory, cruising, protecting and reforesting timberlands; they measure and record volumes, make reproduction surveys, map forest areas, and supervise construction projects on timber sales. They also participate in fire control, enforcement of forest laws and use of recreation areas. Other activities include supervision of tree planting and precommercial thinning crews, pesticide application, fire suppression, site preparation, slash burning, crew supervision, and timber stand improvement.

Second Year

Course Number	Course Title	Credits F	W	S
4.112	Photo Interpretation and Mapping	4		
4.129	Road and Highway Design	4		
2.572	Supervision I	3		
8.104,8.106	Silvicultural Practices I,II		3	3
8.112	Forest Protection		3	
8.120	Forest Operations			3
8.125	Scaling and Grading	3		
8.135,8.136	Cruising Methods I, II		3	3
8.127	Wood Products	3		
8.129	Recreational Facilities			3
HE 250/HE 252/ 5.213	Health or First Aid		3	
	Social science elective		3	3
PE 185	Physical Education			1

ENGINEERING EMPHASIS

Technicians often assist the forest engineer, or oversee construction and use of structures, equipment, and road or rail systems, and perform other engineering duties concerned with removal of logs from the timber area. They determine locations of loading points and storage areas and select methods and equipment for handling logs. Technicians assist the forest engineer in laying out and overseeing the construction of roads used to transport logs from cutting areas to loading sites and storage areas. They inspect the construction of campsites, loading docks, bridges and culverts, equipment shelters, and water and sewage systems to maintain efficient and safe removal of logs from constantly shifting areas.

Second Year

Course Number	Course Title	Credits F	W	S
4.111	Statics and Strength of Materials			3
4.112	Photo Interpretation and Mapping	4		
4.124	Drafting V (Architectural)		3	
4.129	Road and Highway Design	4		
4.131	Mapping and Platting		3	
4.134	Cost Estimating		2	
6.108	Evidence and Procedure for Boundary Location		4	
8.120	Forest Operations			3
8.127	Wood Products	3		
8.129	Recreational Facilities			3
HE 250/HE 252/ 5.213	Health or First Aid			3
PE 185	Physical Education			1
	Social science elective	3	3	
	Electives			3

Recommended Electives

2.300	Introduction to Business	3
3.321	Hydraulic and Pneumatic Systems I	3
4.133	Industrial and Marine Construction Practices	3
2.572	Supervision I	3
6.137	Computation Methods I	1
8.135,8.136	Cruising Methods I,II	3 each
8.280	Cooperative Work Experience	1-24
8.281,8.282,8.283	Job Search Techniques Seminars	1 each
Mth 101/102/103	Mathematics	4 each
BA 131	Introduction to Business Data Processing	4

Industrial Mechanics Technology

AUTOMOTIVE/WELDING/MACHINE SHOP

Industrial Mechanics Technology offers practical knowledge and training in the major fields of automotive, welding, and machine shop. Students should take courses in all three of these fields, especially during the first year, since they are interrelated. For example, an auto mechanic also needs knowledge of welding and machine practices.

A student completing this program should be able to enter any one of several occupations in the mechanical areas, such as automotive, welding and fabrication, machinist, cannery maintenance, millwright, logging equipment maintenance, and engineering.

Because instructors in these programs have worked in industry prior to entering education, they present a practical approach to the skills and attitudes desired in industrial fields. Students have the opportunity to progress at their own rate. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
3.321	Hydraulic and Pneumatic Systems I			3
3.339	Blueprint Reading and Sketching	3		
3.347	Advanced Blueprint Reading		3	
3.380,3.381,3.382	Machine Tools I,II,III	3	3	3
3.390	Auto Engine Systems	3	(3)	(3)
3.391	Auto Suspension Systems	(3)	3	(3)
3.392	Auto Power Train Systems	(3)	(3)	3
4.150	Beginning Welding Practices	3	3	3
4.200,4.202,4.204	Practical Mathematics (or by placement)*	3-4	3-4	(3-4)
Wr 121/1.100	Communications		3	
Wr 122/1.102	Communications			3

Second Year

Course Number	Course Title	Credits F	W	S
3.383,3.384,3.385	Machine Tools IV,V,VI**	(4)	(4)	(4)
3.386	Machine Tools VII**	(1-4)	(1-4)	(1-4)
3.393	Auto Fuels and Electrical Systems**	(4)		
3.394	Auto Tune-up and Instrumentation**		(4)	
3.395	Auto Shop Practices**			(4)
3.396	Auto Special Projects**	(1-4)	(1-4)	(1-4)
4.160	Intermediate Welding Practices**	(4)	(4)	(4)
4.180	Pipe Welding**/***	(1-6)	(1-6)	(1-6)
4.170	Advanced Welding Practices**	(1-4)	(1-4)	(1-4)
4.280	Cooperative Work Experience**	(1-4)	(1-4)	(1-4)
	Social science electives	3	3	
HE 250/HE 252/ 5.213	Health or First Aid			3
PE 185	Physical Education			1

*Students must achieve a mathematics proficiency through the level of 4.204 Practical Mathematics. Contact your adviser.

Students must complete 36 credits of the courses marked.

***Students may take a maximum of 6 credits total toward an Associate degree.

NOTE: 3.393, 3.394, 3.395 must be taken in sequence.

Recommended Electives

		Credits
3.386	Machine Tools VII	1-4
3.396	Auto Special Project	1-4
4.170	Advanced Welding Practices	1-4
4.280	Cooperative Work Experience	1-24
4.281,4.282,4.283	Job Search Techniques Seminars	1 each
9.158	Project (Machine Shop)	1-6
4.180	Pipe Welding	1-6

Maritime Science Programs

The Maritime Sciences program is divided into three major correlated instructional areas. They are designed to prepare students for careers as boat operators, commercial fishermen, and oceanographic technicians.

The Columbia River and nearby Pacific Ocean provide a training area well suited to the maritime instructional program. Practical instruction, both at sea and on the river utilizing the College vessel, is an essential part of these technical programs.

The College plans the instructional program with the assistance of an advisory committee consisting of representatives from the fishing and other marine-related industries.

COMMERCIAL FISHING TECHNOLOGY

The commercial fishing curriculum prepares the student to catch fish, crab, and shrimp using nets, hook and lines. It offers training in food preparation, making and repairing nets, rigging and laying nets, and using various types of pots.

Both practical and technological skills are needed by the commercial fisherman; therefore, training in seamanship, diesel engines, electronics, and a number of related subjects is required. Summer work experience is encouraged, and aid is extended to the student in securing both seasonal and career employment. Typically, the number of job openings exceeds the number of graduates trained to fill them. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
3.500,3.502,3.504	Seamanship I,II,III	4	4	4
3.510,3.511	Marine Electricity I, II	4	4	
3.515	Marine Electronics I			4
3.521,3.522,3.523	Commercial Fishing Techniques I,II,III	4	4	4
3.526	Marine Business Management		3	
3.530	Galley Cooking and Operation			2
3.800,3.802	Diesel Engines I,II	3	3	
5.211	Standard First Aid with CPR	2		
	Social science elective		3	
PE 185	Physical Education**	1		

Course Number	Second Year	Su	F	W
3.321	Hydraulic and Pneumatic Systems I			3
3.280	Cooperative Work Experience	10		
3.281,3.282,3.283	Job Search Techniques Seminars	1		

Course Number	Course Title	Credits Su	F	W
3.525	Advanced Commercial Fishing IV		4	
3.531	Marine Refrigeration Systems I			3
3.620	Navigation (Practical)	3		
4.165,4.166	Marine Welding I,II		3	3
HE 250/HE 252/ 5.213	Health or First Aid			3
	Social science elective		3	
Wr 121/1.100	Communications		3	
Wr 122/1.102	Communications			3
	Mathematics or science elective*		3-4	3-4

*Students must achieve a mathematics proficiency through the level of 4.202 Practical Mathematics. Contact your adviser.

**3.537, 3.538, 3.539 Scuba Diving may be substituted for Physical Education.

MARINE TECHNOLOGY

The Marine Technology curriculum is designed to train an individual to operate motor vessels up to 100 gross tons under different sea, tide and weather conditions with safety and efficiency. In addition, the training will prepare a student to pass the United States Coast Guard Motorboat and Ocean Operator examinations. The students' training includes, but is not limited to, the use of electronic navigation equipment, hydraulic gear and diesel engines. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
3.388,3.389	Marine Shop Practices I,II	3	3	
3.500,3.502,3.504	Seamanship I,II,III	4	4	4
3.510,3.511	Marine Electricity I,II	4	4	
3.515	Marine Electronics I			4
4.165,4.166	Marine Welding I,II		3	3
4.200,4.202	Practical Mathematics (or by placement)*	3-4	3-4	
	Social science elective			3
	Second Year			
3.321	Hydraulic and Pneumatic Systems I		3	
3.531	Marine Refrigeration Systems I		3	
3.800,3.802	Diesel Engines I,II	3	3	
HE 250/HE 252/ 5.213	Health or First Aid	3		
Wr 121/1.100	Communications	3		
Wr 122/1.102	Communications		3	
	Social science elective	3		
PE 185	Physical Education**			1
	Electives	3	3	14

*Students must achieve a mathematics proficiency through the level of 4.202 Practical Mathematics. Contact your adviser.

**3.537, 3.538, 3.539 Scuba Diving may be substituted for Physical Education.

Recommended Electives (Commercial Fishing and Marine Technology)

Course Number	Course Title	Credits
3.521,3.522,3.523	Commercial Fishing Techniques I,II,III (Marine Technology Students Only)	4 each
3.339	Blueprint Reading and Sketching	3
3.382	Machine Tools III	3
BA 131	Introduction to Business Data Processing	4
6.137	Computation Methods I	1
4.101	Drafting I	2
3.280	Cooperative Work Experience	1-24
3.281,3.282, 3.283	Job Search Techniques Seminars	1 each
Mth 95	Intermediate Algebra	4
3.360	Power Systems	2
3.519	Introduction to Commercial Fishing	2
3.668	Commercial Fishing Seminar	3
6.257	Radio Station Operator's Lab	3
3.620	Navigation	3
3.507	Charter Boat Deckhand	3
9.631	Marine Operator's License Preparation	4

OCEANOGRAPHIC TECHNOLOGY

The oceanographic technology curriculum prepares students for employment as technicians or aides in the fields of oceanography, limnology, water pollution research, and marine biology.

Courses provide practice in use and care of research instruments. Electives chosen allow specialization in laboratory work or work in the field, including practice aboard large ocean-going vessels. See Special Note page 28.

First Year

Course Number	Course Title	Credits F	W	S
3.506	Seamanship for Oceanographers			4
3.512,3.514	Marine Biology I,II	4	4	
3.662,3.664,3.666	General Oceanography I,II,III	4	4	4
Mth 95	Intermediate Algebra*	4		
	Social science elective	3	3	(3)
Wr 121,122	English Composition	3	3	
HE 252	Advanced First Aid***			3
	Technical electives		3	3

Second Year

Course Number	Course Title	Credits F	W	S
3.408,3.410,3.412	Ocean Techniques I,II,III	4	4	4
Ph 201,202,203	General Physics or	4	4	4
Ph 207,208,209	Introductory Classical Physics	(4)	(4)	(4)
Ch 104,105,106	General Chemistry or	5	5	5
Ch 201,202,203	General Chemistry	(4)	(4)	(4)
PE 185	Physical Education**			1
	Technical electives	3	3	

Technical electives listed on Page 48.

Oceanography Technical Electives

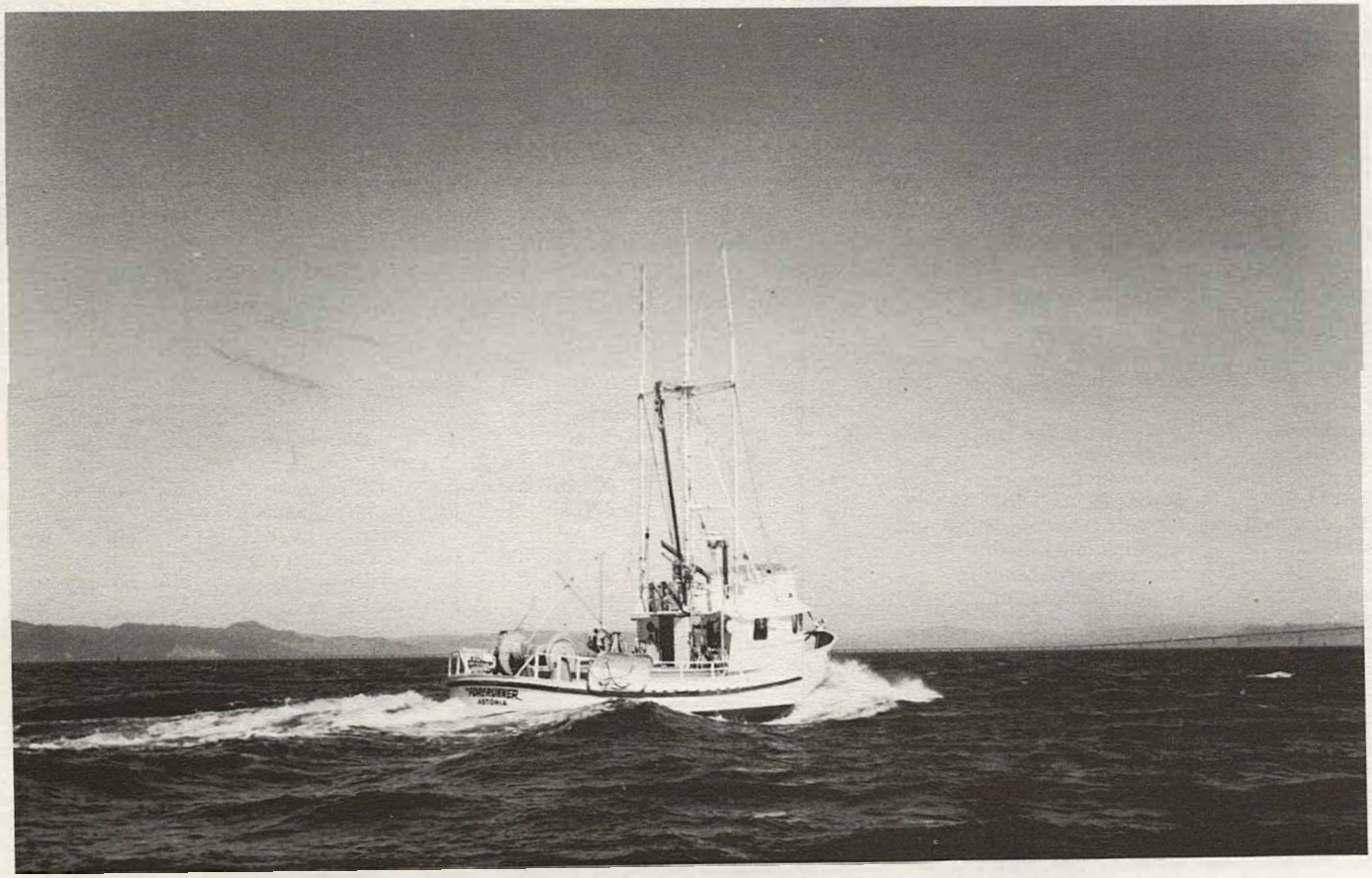
(Students must complete 12 of the credits listed.)

		Credits
Art 131	Beginning Drawing	3
BA 131	Introduction to Business Data Processing	4
Mth 101,102,103	College Algebra, Trigonometry, Probability and Statistics	4 each
Mth 106/163	Elementary Calculus	4
Mth 200,201, 202,203	Calculus with Analytic Geometry	4 each
Mth 233	Introduction to Numerical Computation-FORTRAN	4
G 201,202,203	Geology	3 each
G 204,205,206	Geology Lab	1 each
3.281,3.282,3.283	Job Search Techniques Seminars	1 each
3.280	Cooperative Work Experience	1-24
GL 50	First-Year German	4
RL 50	First-Year French	4
RL 60	First-Year Spanish	4
4.165,4.166	Marine Welding I, II	1-3 each
4.150	Beginning Welding Practices	1-9
4.160	Intermediate Welding Practices	1-12
3.380,3.381, 3.382	Machine Tools I, II, III	3 each
3.620	Navigation	3
4.133	Industrial and Marine Construction Practices	3
3.519	Introduction to Commercial Fishing	2
3.500, 3.502, 3.504	Seamanship I, II, III	4
3.339	Blueprint Reading and Sketching	3
3.388	Marine Shop Practices I	3
3.510,3.511	Marine Electricity I,II	4 each
3.515	Marine Electronics I	4
3.800,3.802	Diesel Engines I, II	3 each
4.101	Drafting I	2
4.117	Drafting II	3
0.519	Basic Photography	2
6.150	Introduction to D.C. Circuit Analysis	4
6.155	Introduction to A.C. Circuit Analysis	4
6.160	Introduction to Solid State	4
6.170,6.171, 6.172	Electronic Bench Techniques I, II, III	4 each
6.300	Special Devices and Applications	4
6.301	Solid State Linear Circuits	4
6.302	Electromagnetic Fields and Waves	4
6.217	Discrete Logic Circuits	4
6.218	Digital Integrated Circuits	4
6.219	Digital Computer Electronics	4

*Students must achieve a mathematics proficiency through the level of Mth 95 Intermediate Algebra. Contact your adviser.

**3.537, 3.538, 3.539 Scuba Diving may be substituted for Physical Education.

***Possession of a valid Advanced First Aid Card at graduation will also meet this requirement.



Course Descriptions

Liberal Arts & Sciences
Vocational-Technical Education

LIBERAL ARTS & SCIENCES

Anth 101
General Anthropology
(3 Class Hrs./Wk.) 3 Credits
Introduction to physical anthropology. Provides a basic understanding of the processes of human evolution and variation. Includes an overview of the field in historical perspective and current controversy, Mendelian genetics, population genetics, modern human variation and classification, primatology and human paleontology.

Anth 102
General Anthropology
(3 Class Hrs./Wk.) 3 Credits
Introduction to cultural anthropology. Provides a basic understanding of the variety of cultures in the world, an appreciation of the sources of information used by cultural anthropologists, and an overview of evolutionary, ecological and functional paradigms.

Anth 103
General Anthropology
(3 Class Hrs./Wk.) 3 Credits
Introduction to archaeological methods and theories. Emphasizes techniques used in gathering and interpreting data on past cultures, and encourages preservation of such data. Description, based on present knowledge, of the prehistory of Oregon and Washington.

Anth 211
Introduction to Field Archaeology
(2 Class-10 Lab Hrs./Wk.) 4 Credits
Utilizes the field school approach to acquaint students with scientific methods of nonintrusive site location and description. Students participate in archaeological fieldwork employing those techniques currently used by professional archaeologists to collect and record archaeological data, including documenting the existence of the site, identifying site boundaries, surveying and mapping the surface, and preliminary analysis of surface debris. Prerequisite: Anth 103 General Anthropology or instructor approval.

Anth 212
Introduction to Field Archaeology
(2 Class-10 Lab Hrs./Wk.) 4 Credits
Provides the student with an understanding of archeological field techniques. Covers site testing and excavation procedures, including working with a three-dimensional coordinate system, recording excavation data, stratigraphy, preservation of features and artifacts, and other field techniques. Prerequisite: Anth 103 General Anthropology or instructor approval.

Anth 213
Introduction to Field Archaeology
(1 Class-12 Lab Hrs./Wk.) 4 Credits
Introduces the student to methods of cataloging, processing, and identifying artifacts from archaeological surveys and excavation. Basic lab techniques involve preparing, recording, classifying, describing, and interpreting objects from both historic and prehistoric sites. Some analysis and preparation of skeletal remains are included. Prerequisite: Anth 103 General Anthropology or instructor approval.

Art 115, 116, 117
Basic Design
(4 Class-Lab Hrs./Wk.) 3 Credits Each
Studio exercises involving the basic elements and principles of design. Will assist students in experiencing the satisfaction of creative expression. Art 115: Exploration in two-dimensional design of the interdependence of form, function, technique, materials and their uses in problem solving. Development of a vocabulary for work and criticism with special emphasis given sensitivity and awareness. Art 116: Examination of vocabulary, function and application of three-dimensional form and structure. Exploratory work challenging traditional and existing three-dimensional design concepts encouraged. Art 117: Mature artistic experimentation into both two and three-dimensional design areas with emphasis upon the student's personal development. Prerequisite: Must be taken in sequence or instructor approval.

Art 118
Beginning Calligraphy
(4 Class-Lab Hrs./Wk.) 2 Credits
Introduces the practice and execution of the art of written forms from early book hands of the 4th century A.D. to the emergence of diverse and formal minuscule styles of early Renaissance. Includes a brief review of historical development. Instruction in formal Italic handwriting.

Art 131, 132, 133
Beginning Drawing
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Basic drawing methods: basic technique and conceptual theory. Art 131: Fundamental drawing skills, graphic structure, composition, exploration of drawing media, and creative expression. Art 132: Portrait and figure composition, emphasizing the structure of the human form and the expressive and creative use of drawing media. Morphological anatomy. Art 133: Studio. Advanced problems in the use of form and content. Develops and encourages individual interpretation and technique. Opportunity is provided for independent work toward personal goals. Prerequisite: Must be taken in sequence or instructor approval.

Art 142
Beginning Crafts
(6 Class-Lab Hrs./Wk.) 3 Credits
Introduction to the theory and technique of contemporary crafts. Handwrought jewelry: emphasizes design, soldering, casting and finishing of copper, brass and silver. Stone setting may be covered. Fabrics: design and production of wax and paste resist fabrics, off-loom weaving, and fabric sculpture and collage. Previous basic design coursework recommended.

Art 154, 155, 156
Beginning Ceramics
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Introduction to ceramic techniques and materials. Individual instruction in clay preparation, throwing and hand-building of clay forms, glaze mixing and surface design.

Art 157, 158, 159
Beginning Jewelry/Metalsmithing
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Introduction to the handworking of nonferrous metals: copper, brass, silver and gold. Students design, form, solder, cast and finish metal objects. Includes construction and centrifuge casting of jewelry.

Art 161, 162, 163
Beginning Photography
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Introduction to the art and technique of photography. Explores the realm of photographer as artist, using the elements and principles of design. Particular emphasis on developing accurate observation, expanding one's imagination, and expressing a subject or theme more effectively through photography.

Art 171, 172, 173
Beginning Printmaking
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Introduction to the techniques of making original fine art prints through lectures, studio projects and individual application. No prerequisites, but some drawing and design experience desirable. Presents coursework in graphic communication recommended for architecture and interior architecture and commercial art program.

Art 181, 182, 183
Beginning Painting
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Fundamentals of painting techniques. Art 181: Painting fundamentals related to compositional and technical problems. Exploration of the oil and acrylic media and expression of individual creativity. Art 182: Portrait and figure composition, emphasizing the structure of the human form. Expressive and creative use of painting media and color. Emphasis also on space concepts and enrichment of visual vocabulary. Art 183: Studio. Advanced painting problems with study of organization, theory, and philosophy of painting as well as contemporary techniques. Opportunity is provided for independent work toward the student's personal development. Prerequisite: Must be taken in sequence or instructor approval.

Art 184, 185, 186
Beginning Watercolor
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Technique and use of water color, with special attention to its characteristics as a painting medium. Recommended basic transfer course for landscape architecture and, in most cases, provides transfer credit toward studio art electives requirement.

Art 191, 192, 193
Beginning Sculpture
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Introduction to techniques of sculpture. Basic portrait study: emphasizes construction of facial features and form. Basic figure study: emphasizes construction of human features. Stone and wood carving: emphasizes form, carving techniques and finishing processes.

Art 204, 205, 206
History of Western Art
(3 Class Hrs./Wk.) 3 Credits Each
An historical survey of visual arts in the Western world from prehistoric to modern times. Will satisfy the literature sequence requirement for the associate in arts degree.

Art 215, 216, 217
Intermediate Design
(4 Class-Lab Hrs./Wk.) 3 Credits Each
Extensive examination of the language of vision as it applies to creative work; application of the visual awareness begun in the basic design sequence. Prerequisite: Art 115, 116, 117 Basic Design or instructor approval.

Art 218
Calligraphy
(6 Class-Lab Hrs./Wk.) 3 Credits
A brief review of the lower and upper case Italic formal alphabet. Emphasizes swash' caps, structural Roman letters of the Imperial Inscription format, lower case Roman, Uncial. Introduces black letter and flat edge lower-case Roman, time allowing. Prerequisite: Art 118 Beginning Calligraphy or instructor approval.

Art 219
Calligraphy
(6 Class-Lab Hrs./Wk.) 3 Credits
A continuation of Art 218. The Italic cursive hand with joins includes four additional alphabets of historical importance. Traditional Rustic, Modern Rustic, Uncial, and Edward Johnston's book hand. Prerequisite: Art 218 Calligraphy or instructor approval.

Art 220
Calligraphy
(6 Class-Lab Hrs./Wk.) 3 Credits
A continuation of Art 219. Lettering techniques and shop practices necessary for actual production of calligraphic and drawn letters on a commercial basis. Page design, Roman Imperial caps and black letter cursive alphabets will be studied and written. Prerequisite: Art 218, 219 Calligraphy or instructor approval.

Art 231, 232, 233
Intermediate Drawing
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Continued visual and technical problem solving begun in the beginning drawing sequence. Prerequisite: Art 131, 132, 133 Beginning Drawing or instructor approval.

Art 244, 245
Stained/Leaded Glass I, II
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Techniques of stained and leaded glass, including copper foil, staining, cutting, soldering and finishing. Prerequisite: For Art 245: Art 244 Stained/Leaded Glass I or instructor approval.

Art 254, 255, 256
Intermediate Ceramics
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Application of techniques begun in beginning ceramics. Emphasis on experimental research with clay bodies, glazes, kiln building and firing methods. Prerequisite: Art 154, 155, 156 Beginning Ceramics or instructor approval.

Art 257, 258, 259
Intermediate Jewelry/Metalsmithing
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Continuation of Art 159. Application of techniques begun in beginning jewelry/metalsmithing. Prerequisite: Art 157, 158, 159 Beginning Jewelry/Metalsmithing or instructor approval.

Art 261, 262, 263
Intermediate Photography
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Further study of the form, content, and techniques of photographic expression. Prerequisite: Art 161, 162, 163 Beginning Photography or instructor approval.

Art 271, 272, 273
Intermediate Printmaking
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Continuation of Art 173. Application of techniques begun in beginning printmaking. Prerequisite: Art 171, 172, 173 Beginning Printmaking or instructor approval.

Art 281, 282, 283
Intermediate Painting
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Methods, materials, compositional and technical problems of painting begun in the beginning painting sequence. Prerequisite: Art 181, 182, 183 Beginning Painting or instructor approval.

Art 284, 285, 286
Intermediate Watercolor
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Continuation of Art 186. Application of techniques begun in beginning watercolor. Prerequisite: Art 184, 185, 186 Beginning Watercolor or instructor approval.

Art 291, 292, 293
Intermediate Sculpture
(6 Class-Lab Hrs./Wk.) 3 Credits Each
Application of techniques begun in beginning sculpture. Emphasis on casting methods and metal construction. Prerequisite: Art 191, 192, 193 Beginning Sculpture or instructor approval.

Art 298
Independent Study
(2 Class-Lab Hrs./Wk./Credit) 1-3 Credits
Offers opportunities to increase skills and to apply theory and methods. Prerequisite: Instructor approval.

BA 101
Introduction to Business
(4 Class Hrs./Wk.) 4 Credits
Considers the social and political environment within which business functions in the United States. Origins and trend of public attitudes toward business and to the evolution of good managerial attitudes and policies. Required for business administration majors.

BA 131
Introduction to Business Data Processing
(4 Class Hrs./Wk.) 4 Credits
Introduces concepts, elements and structure of business data processing systems. Includes classifying, calculating, and reporting functions, programing, and computer fundamentals.

BA 211, 212, 213
Principles of Accounting I, II, III
(3 Class Hrs./Wk.) 3 Credits Each
Use of basic accounting concepts and procedures as tools for the administration of business enterprise, methods of recording, reporting, and interpreting financial data. Two quarters financial and one quarter managerial. Required of business administration majors.

BA 214
Business Communications
(3 Class Hrs./Wk.) 3 Credits
Basic business communications and an analysis of their effectiveness. Writing experience is gained through simulated business situations. Covers correspondence such as the request, response, claim and adjustment, sales, public relations, and application letters, as well as informal memorandums, informal reports, and formal survey-type reports. Prerequisite: Wr 121 English Composition or 2.524 Business Correspondence I or instructor approval.

BA 218
Personal/Family Finance
(3 Class Hrs./Wk.) 3 Credits
The role of the consumer in the economy, problems of financing family and individual needs, including budgeting, banking relationships, charge accounts, installment buying, insurance, wills, real estate investing, and personal taxes.

BA 221
Production
(3 Class Hrs./Wk.) 3 Credits
Operating techniques used in ad-

ministration of manufacturing plants together with application to other areas of business management, organization, supervision problems, employee relations, wage payment, output standards, plant location, equipment layout, scientific management. Prerequisite: Instructor approval.

BA 222
Finance
(3 Class Hrs./Wk.) 3 Credits
Sources, uses, cost and control of funds in the business enterprise. Nature and functions of money, debt and equity financing, financial institutions. An introduction to money market analysis; governmental regulation of the financial process. Prerequisite: BA 211 Principles of Accounting I or 2.531 General Accounting I or instructor approval.

BA 223
Principles of Marketing
(3 Class Hrs./Wk.) 3 Credits
The role of marketing in our socio - economic system. Emphasizes marketing, problem solving and decision-making required of a firm's executives. The coverage is analytical and promotion is evaluated. For students who plan to specialize in marketing and also for those who will be taking only one course in the field. Prerequisite: Instructor approval.

BA 226
Business Law
(3 Class Hrs./Wk.) 3 Credits
Framework of the law as it affects the businessman, how the law operates, how it is enforced, how to use the law in business. Origins of law, the relations of business to society and the law, evolution of business within the framework of the law, the historical development and present-day applications of the law of contracts.

BA 231
Business Data Processing-COBOL I
(4 Class Hrs./Wk.) 4 Credits
Application of computers in business data processing using COBOL. The development of a common business - oriented computer language and its use in modern business organizations. Comparison of COBOL with other automatic programing languages. Prerequisite: BA 131 Introduction to Business Data Processing.

BA 232
Introduction to Business Statistics
(4 Class Hrs./Wk.) 4 Credits
Elementary statistics and probability as a tool for business decision-making. Introduces probability, sampling distributions, estimation including confidence intervals, hypothesis testing, and regression analysis. Prerequisite: Mth 103 Probability and Statistics or Mth 162 Mathematics for Business Management and Social Sciences.

BA 238
Sales
(3 Class Hrs./Wk.) 3 Credits
Salesmanship in the modern marketing concept, including persuasive communication, the art of selling, and fundamental principles of sales communication. Applies these techniques and principles to a selected product.

BA 239
Advertising
(3 Class Hrs./Wk.) 3 Credits
See course description, p. 63, 2.308.

BA 264
Real Estate Practice
(3 Class Hrs./Wk.) 3 Credits
Procedures involved in the listing, selling, and closing of residential property. Emphasizes agency relationships, the Oregon Real Estate License Law (ORS 696), listing agreements, purchase agreements, client trust accounts, neutral escrows, co-op transactions. closing procedures, codes of ethics, professional organizations, and related real estate activities.

BA 265
Real Estate Office Management
(3 Class Hrs./Wk.) 3 Credits
Methods for establishing and operating a small real estate office. Emphasizes organizational formats, planning, office facilities, financial records, non-financial records, financial reports, office personnel, office manuals, and public relations.

BA 266
Real Estate Supervision of Sales Personnel
(3 Class Hrs./Wk.) 3 Credits
Methods for supervising the activities of real estate sales personnel. Emphasizes licensing requirements, planning, selection, training, and supervision of sales personnel, motivation, leadership, authority, discipline, communication, advertising and public relations.

BA 287
Real Estate Law I
(3 Class Hrs./Wk.) 3 Credits
Surveys Oregon real estate law as it applies to the ownership, use and transfer of real property. Emphasizes basic real property law, legal descriptions, landlord-tenant relationships, transfer of title, real estate contracts, encumbrances, title insurance, recordation, taxes, assessments, and land use controls.

BA 288
Real Estate Finance I
(3 Class Hrs./Wk.) 3 Credits
Methods of financing the acquisition of real property. Emphasizes lending laws, the mortgage market, financing documents, foreclosures, governmental loan programs, appraisals, mathematical calculations, taxation, and other methods of financing.

Bi 101, 102, 103
General Biology
(3 Class-3 Lab Hrs. Wk.) 4 Credits Each
Introduction to the basic principles of biology. Bi 101: Chemical and cellular basis of life, energy transformation. genetics. Bi 102: Structure and functions of systems of plants and animals. Bi 103: Biology of populations, communities and diversity of organisms. Does not meet requirement for biology majors. Need not be taken in sequence. Consult with instructor if one quarter of college biological sciences has been completed.

Bot 201, 202, 203
General Botany
(3 Class-3 Lab Hrs./Wk.) 4 Credits Each
Introduction to plant biology. Bot 201: Survey of the plant kingdom. Includes structure and function and life cycles. Bot 202: Life function of plants; photosynthesis respiration, growth. differentiation, reproduction. anatomy of seed plants. Bot 203: Classification of Northwest flowering plants and use of keys.

Ch 101, 102
General Chemistry
(4 Class-2 Lab Hrs./Wk.) 4 Credits Each
For students who have had no previous training in chemistry. Especially designed for students entering the nursing profession and some related areas. Requires constant use of basic arithmetic, conversions, percentages, ratios and proportions, the mastery of which are prerequisite to enrolling in Ch 101. Must be taken in sequence. Prerequisite: Mastery of the following mathematics techniques: basic arithmetic, percentages, ratios and proportions, and conversions.

Ch 103
General Chemistry (Biochemistry)
(4 Class-2 Lab Hrs./Wk.) 4 Credits
Introduces and explains fundamental principles of biochemistry. Includes a survey of organic chemistry, discussion of the four important types of biomolecules: carbohydrates, lipids (fats and oils), proteins, and nucleic acids. Students complete an out-of-class term project relating an aspect of chemistry to their intended field of study or career goal. Prerequisite: Ch 101, 102 General Chemistry or equivalent.

Ch 104, 105, 106
General Chemistry
(5 Class-2 Lab Hrs./Wk.) 5 Credits Each
Introduces the field of chemistry, providing an understanding of the structures of atoms, molcules, and ions and their interaction. Requires mastery of two years of high school algebra or equivalent (completion of Mth 95 Intermediate Algebra is normally a sufficient equivalent). Serves as a foundation for the further study of chemistry. Must be taken in sequence.

Ch 201, 202, 203
General Chemistry
(4 Class-2 Lab Hrs. Wk.) 4 Credits Each
Service course covering the basic principles of general chemistry, for the student who has a good knowledge of high school chemistry. Requires mastery of two years of high school algebra or equivalent (completion of Mth 95 Intermediate Algebra is normally a sufficient equivalent). Serves as a foundation for further chemistry courses. Must be taken in sequence.

CJ 100
Survey of the Criminal Justice System
(3 Class Hrs./Wk.) 3 Credits
Introductory survey of the functional areas of the criminal justice system in the United States, including law enforcement, courts, corrections, and related areas.

CJ 101
Introduction to Criminology
(3 Class Hrs./Wk.) 3 Credits
Crime as a social problem. Theoretical perspectives on the causes, treatment, and prevention of crime.

CJ 110
Introduction to Law Enforcement
(3 Class Hrs./Wk.) 3 Credits
In-depth study of the role and responsibilities of law enforcement in American society. Historical development, role concept and conflicts, professionalization, use of discretion, current enforcement practices and career opportunities.

CJ 111
Concepts of Enforcement Services
(4 Class Hrs./Wk.) 4 Credits
Exploration of theories, philosophies, and concepts related to the role expectations of the line enforcement officer. Emphasizes patrol, traffic, and public service responsibilities and their relationship to the administration of justice system. Prerequisites: CJ 100 Survey of the Criminal Justice System and CJ 110 Introduction to Law Enforcement or instructor approval.

CJ 120
Introduction to the Judicial Process
(3 Class Hrs./Wk.) 3 Credits
Judicial and social processes from arrest through appeal; jurisdiction of state and federal courts. Prerequisite: CJ 100 Survey of the Criminal Justice System or instructor approval.

CJ 130
Introduction to Corrections
(3 Class Hrs./Wk.) 3 Credits
Examination of the historical development and current processes in corrections, including incarceration, probation, parole and other treatment alternatives. Prerequisite: CJ 100 Survey of the Criminal Justice System or instructor approval.

CJ 140
Introduction to Criminalistics
(4 Class Hrs./Wk.) 4 Credits
Surveys forensic science and its development. Principles of the natural sciences in the collection, examination, evaluation, and preservation of evidence; the applicability and limitations of instrumental, physical, and chemical measurements. Prerequisites: CJ 100 Survey of the Criminal Justice System, CJ 210 Introduction to Criminal Investigation, CJ 220 Introduction to Substantive Law or instructor approval.

CJ 195
Independent Study
(1 Class-2 Lab Hrs. Wk./Credit) 1-3 Credits
Studies in criminal justice to fit the needs of individual students. Prerequisite: Instructor approval.

CJ 199
Special Problems in Criminal Justice
(1 Class Hr./Wk./Credit) 1-4 Credits
Studies in criminal justice to fit the needs of individual students. With instructor's approval only. May be repeated for a maximum of 12 credits.

CJ 200
Introduction to Community Relations
(3 Class Hrs./Wk.) 3 Credits
Surveys criminal justice in the changing community; explores social and community tension, conflict and disorder; application of human relations activities and the development of positive relationships between the public and the criminal justice system. Prerequisite: CJ 100 Survey of the Criminal Justice System or instructor approval.

CJ 210
Introduction to Criminal Investigation
(3 Class Hrs./Wk.) 3 Credits
Studies basic principles and theories applicable to all criminal investigation; interviewing, interrogation, sources of information, recording the crime scene, surveillance, and other concepts. Prerequisite: CJ 100 Survey of the Criminal Justice System or instructor approval.

CJ 215
Criminal Justice Administration
(3 Class Hrs./Wk.) 3 Credits
A survey of administrative practices for criminal justice organizations. Prerequisite: Instructor approval.

CJ 216
Criminal Justice Management
(3 Class Hrs./Wk.) 3 Credits
An examination and analysis of management concepts, techniques and policies for the criminal justice system.

CJ 217
Criminal Justice Supervision
(3 Class Hrs./Wk.) 3 Credits
The application of supervisory principles to the criminal justice system.

CJ 220
Introduction to Substantive Law
(3 Class Hrs./Wk.) 3 Credits
Historical development of common law; definitions and elements of crime and criminal responsibility; selected federal, state and local laws. Prerequisite: CJ 100 Survey of the Criminal Justice System or instructor approval.

CJ 222
Introduction to Procedural Law
(3 Class Hrs./Wk.) 3 Credits
Study and application of procedural law with emphasis on arrest, stop and frisk, search and seizure, and the legal requirements involved in taking a person into custody. Prerequisite: CJ 100 Survey of the Criminal Justice System or instructor approval.

CJ 223
Rules of Evidence
(3 Class Hrs./Wk.) 3 Credits
Origin, development, philosophy and constitutional basis of evidence; kinds and degrees of evidence and rules governing admissability. Prerequisite: CJ 100 Survey of the Criminal Justice System, and CJ 220 Introduction to Substantive Law or instructor approval.

CJ 226
Introduction to Constitutional Law
(3 Class Hrs./Wk.) 3 Credits
Emphasizes the judicial process in constitutional cases; the federal system including the powers and the limitations of the judicial, legislative and executive branches of government; state power and the national economy; state taxation and federal power respecting interstate and foreign commerce; intergovernmental immunities and interstate relations. Emphasizes the interplay of the commerce clause; states' rights and the problems of federalism. Reviews the constitutional foundation of our present social structure.

CJ 227
Civil Liberties
(3 Class Hrs./Wk.) 3 Credits
In-depth study of the rights and liberties contained in the United States Constitution and of the Supreme Court opinions which define these rights and liberties. The First, Fifth and Fourteenth Amendments are emphasized, including constitutional protection of individual rights; substantive due process and procedural due process; problems of freedom of speech, religion, and assembly; problems of equal protection of law, and the privileges and immunities clause.

CJ 295
Independent Study
(1 Class-2 Lab Hrs./Wk./Credit) 1-3 Credits
Studies in criminal justice to fit the needs of individual students. Prerequisite: Instructor approval.

CPL 120
Credit for Prior Learning
(3 Class Hrs./Wk.) 3 Credits
Required course for students planning to develop a prior learning portfolio. Students (1) develop a personal educational program that is compatible with degree requirements, (2) assess their educational strengths and weaknesses and develop a plan to address the weaknesses, (3) develop a portfolio containing a description, analysis and documentation of past learning experiences that are relevant to their current educational goals. May be repeated for a maximum of 6 credits.

D 192
Dance Laboratory, Beginning
(3 Class-Lab Hrs./Wk.) 2 Credits
Techniques in one of the following: ballet, folk, jazz, tap or modern dance.

D 251
Introduction to Dance
(3 Class Hrs./Wk.) 3 Credits
An overview of professional and educational aspects of dance, the function of dance in society, and the significance of dance as an art form in contemporary culture.

D 252
Fundamentals of Rhythm
(3 Class Hrs./Wk.) 3 Credits
Rhythm as a basic factor for movement. Rhythmic devices used in the dance notation and rhythmic analysis. Concurrent enrollment in D 192 or 292 Dance Laboratory recommended.

D 260
Dance Performance: Introduction to Choreography
(6 Class-Lab Hrs./Wk.) 3 Credits
Open to both men and women interested in developing their skills in the field of dance, and gaining experience in performance of dance as a theatre art. Production problems of staging, lighting and costuming for dance; dance concert.

D 292
Dance Laboratory, Intermediate
(3 Class-Lab Hrs./Wk.) 2 Credits
Techniques in one of the following: ballet, jazz, tap, or modern dance. Prerequisite: D 192 Dance Laboratory, Beginning or instructor approval.

D 294
Dance Laboratory, Advanced
(3 Class-Lab Hrs./Wk.) 2 Credits
Advanced movement theory and apprenticeship in ballet, jazz and modern dance. Prerequisites: D 192 and D 292 Dance Laboratory or instructor approval.

Ec 115
Outlines of Economics
(4 Class Hrs./Wk.) 4 Credits
For non-economics majors, especially those who have an interest in major economic activities such as unemployment, creation of money, Federal Reserve functions, fiscal policy, supply and demand, and international trade.

Ec 201, 202, 203
Principles of Economics
(3 Class Hrs./Wk.) 3 Credits Each
Basic economic education for careers in business, law or public service. Valuable to citizens understanding the economic system. Ec 201: Macroeconomics, the study our national economic problems, fiscal and monetary policy and the implementation of the policies in solving the problems. Ec 202: Microeconomics, which examines the interactions of the individual and business firms in the market place. How our market system allocates our resources and distributes our income. Ec 203: A study of the public sector, international economics, economy growth and comparative economics sytems, specifically Russia, France, Yugoslavia, Sweden, Japan, and China. Prerequisite: For Ec 203: Ec 201 or Ec 202 Principles of Economics or instructor approval.

Ec 215
Economic Development of the United States
(3 Class Hrs./Wk.) 3 Credits
Examines the factors which influenced the rate of growth of the American economy and the well-being of various segments of our society as the country grew. Traces the development of economic institutions including industry, agriculture, commerce, transportation, labor and finance, emphasizing the period from 1930 to the present. Examines the increasing role of government, in particular the regulatory agenies.

Ec 220
Contemporary United States Economic Issues
(3 Class Hrs./Wk.) 3 Credits
Examines contemporary economic problems and issues, with particular attention to their effect on American society. Analyzes governmental economic policies and practices affecting such problems and issues. Prerequisite: Instructor approval.

Eng 101, 102, 103
Survey of English Literature
(3 Class Hrs./Wk.) 3 Credits Each
Readings, writings, and discussions of the historical, cultural, and philosophical background of English literature. Eng 101: Early period, through the 16th century. Eng 102: 17th and 18th centuries. Eng. 103: 19th and 20th centuries.

Eng 104
Introduction to Literature
(3 Class Hrs./Wk.) 3 Credits
Study of short fiction, either as it developed chronologically, or by genre (i.e., realist, romantic, etc.). Two or three novels are read for a comparative experience. Writings reinforce learning.

Eng 105
Introduction to Literature
(3 Class Hrs./Wk.) 3 Credits
Study of the drama, either as it developed chronologically or by type (i.e., realistic, naturalistic, etc.). Nine plays are read with emphasis on master works, supplemented by a study of films and film techniques. Attendance at some local play productions is required. Writing of papers required.

Eng 106
Introduction to Literature
(3 Class Hrs./Wk.) 3 Credits
Study of poetry. A combination of chronological and genre approach is used. Students write poetry, listen to records of poetry, and share favorite old and modern works.

Eng 107
World Literature
(3 Class Hrs./Wk.) 3 Credits
Studies masterpieces of Greek, Hebrew and Roman literature and the philosophical/social environment in which they were written. Supplemented by works from Indian, Persian, Chinese and Japanese literatures. Covers the period from 1000 B.C. to the beginning of the Christian era. Excellent reading ability recommended.

Eng 108
World Literature
(3 Class Hrs./Wk.) 3 Credits
Studies masterpieces of Italian, French, Spanish, and British literature and the Middle Ages/Renaissance cultures of which they were a part. Supplemented by works from Eastern literature, emphasizing Chinese. Prerequisite: None. Eng 107 World Literature and excellent reading ability recommended.

Eng 109
World Literature
(3 Class Hrs./Wk.) 3 Credits
Studies the Age of Reason and the Romantic period to the 20th century. Emphasizes the novel. Includes literature of Germany, Scandinavia, Russia, Ireland, and to a lesser degree, Oriental literatures, especially Japanese.

Eng 201, 202, 203
Shakespeare
(3 Class Hrs./Wk.) 3 Credits
Eng 201: The early plays. General introduction to the Elizabethan age. Students read the sonnets, study meter and prosody, and read plays and critical works about those plays. Oral and written reports are required. Eng 202: The Histories/Tragedies. Explores Shakespeare's sense of history as demonstrated in the Henry cycle juxtaposed against his source in Holinshed. Following the chronology, two major tragedies and a tragi-comedy are studied. Eng 203: The late plays. Studies late Shakespearean plays: the late tragedies and problem comedies. Students read criticism, make oral reports and prepare one written report per term. In spring quarter students visit Ashland where they view a Shakespearean and a few modern plays. Specific coursework subject to modification in 1981-82.

Eng 253
Survey of American Literature
(3 Class Hrs./Wk.) 3 Credits
Seventeenth and eighteenth century American literature. Students write their understanding of and responses to six to ten of the assigned readings, in addition to participating in discussions of the literature.

Eng 254
Survey of American Literature
(3 Class Hrs./Wk.) 3 Credits
Nineteenth century American literature. Students write six to eight papers showing their understanding of and response to assigned readings, in addition to participating in discussions.

Eng 255
Survey of American Literature
(3 Class Hrs./Wk.) 3 Credits
Twentieth century American literature. Students write six to eight papers showing their understanding of and response to assigned reading, in addition to participating in discussions.

FA 101
Introduction to Motion Pictures
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Presents an historical and critical viewpoint of the motion picture industry. Students view and critique various films. Emphasizes the study of production values: story and script, acting and directing, and sound and picture editing techniques.

FA 151
Video Production I
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Basic television production techniques for the beginning student. Includes monochrome and color camera set-up procedures, types of lenses and their functions, picture composition, and lighting design.

FA 152
Video Production II
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Basic television production techniques for the beginning student. Includes audio, videotape and film use, and production switching. Prerequisite: FA 151 Video Production I or instructor approval.

FA 153
Video Production III
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Basic television production techniques for the beginning student. Includes the design of graphics and scenery, production systems design, directing and acting principles, and remote operations. Prerequisite: FA 151, 152 Video Production I, II or instructor approval.

FA 251
Film Production I
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Introduces the process of filmmaking, including preproduction planning, financing, and script development. Each student develops a premise, writes a film treatment, and presents a finished script as a final project.

FA 252
Film Production II
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Introduces the technical aspects of filmmaking. Includes types of cameras and lenses, film raw stock, exposure meters, and lighting techniques. Students commit a previously developed shooting script to Super-8 film using equipment furnished by the department. Prerequisite: FA 251 Film Production I or instructor approval.

FA 253
Film Production III
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Introduces the technical aspects of film editing and post-production techniques. Students learn about tape and cement splicing by practicing on various projects. Final project consists of editing a silent film no more than five minutes in length, together with all related post-production work. Prerequisite: FA 251, 252 Film Production I, II or instructor approval.

FA 265
Introduction to Film Styles
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Introduces the history, technique, and art of the cinema through the examination of films by some of the filmmakers who have had a major impact on cinema and the development of film language. Emphasizes acquiring the necessary background for evaluation of film as an art form.

FA 267
Genres and Themes of Films
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Examines a number of films representing a single genre (western, comedies, etc.) or expressing common themes in an attempt to focus on the various directors involved and their diverse styles, techniques, and personal expression.

FL 225
Child Development
(3 Class Hrs./Wk.) 3 Credits
Introduces the processes of human development from conception through the pre-adolescent years, with attention to educational applications. Provides a basic foundation in the science of psychology as it pertains to children's development.

FL 240
Contemporary American Family
(3 Class Hrs./Wk.) 3 Credits
Introductory study of the family as a social institution. Considers the various forms of "family" that exist in current American society and comparisons with historical family structures. Addresses current trends, changes, and problems in marriage and family. Emphasizes the influence of marriage and family on child development.

FN 225
Nutrition
(4 Class Hrs./Wk.) 4 Credits
The science of nourishing the body. Investigates the essential nutrients, the manner in which they function in the body, recommended intake levels, and major food sources of each. Analyzes dietary intake and evaluates mass media nutrition information. Explores the current national and world food and nutrition situation.

G 201
Physical Geology
(3 Class Hrs./Wk.) 3 Credits
Part one of a two-term sequence emphasizing the natural processes by which the earth's surface has been built up, deformed, and torn down. Surveys the earth in time and space perspective, fundamental materials, and processes of sedimentation. Prerequisite: Concurrent enrollment in G 204 Physical Geology Laboratory.

G 202
Physical Geology
(3 Class Hrs./Wk.) 3 Credits
Part two of a two-term sequence emphasizing the forces acting upon and within the earth which continually reshape the continents, oceans, and mountain ranges. Surveys the distribution of natural resources within the earth's crust. Prerequisites: G 201 Physical Geology and concurrent enrollment in G 205 Physical Geology Laboratory.

G 203
Historical Geology
(3 Class Hrs./Wk.) 3 Credits
Applies the principles of physical geology to a chronological accounting of earth history, including the history of life. Integrates both physical and historical geology through a series of field and laboratory experiences. Prerequisites: G 202 Physical Geology or instructor approval and concurrent enrollment in G 206 Geology Laboratory.

G 204, 205, 206
Geology Laboratory
(2 Lab Hrs./Wk.) 1 Credit Each
Laboratory and field work to accompany G 201, 202, 203. For all students desiring practical knowledge of geology. Periodic weekend field labs spring term. Prerequisite: Concurrent enrollment in G 201, 202, 203 Geology.

Geog 105
Cultural Geography
(3 Class Hrs./Wk.) 3 Credits
The evaluation, use and modification of landscapes and environment of the earth by the cultural groups that occupy them, including considerations of the future. Offered alternate years.

Geog 106
Economic Geography
(3 Class Hrs./Wk.) 3 Credits
Introduces the study of economic geography as an analysis of the world

economy, viewing the distribution of various types of economic activity and consequences of regional divergence. Offered alternate years.

Geog 107
Physical Geography
(3 Class Hrs./Wk.) 3 Credits
Study of patterns of physical features on the earth's surface, including their interactions to form characteristic landscapes and regional settings for human life and livelihood. Offered alternate years.

GL 50, 51, 52
First-Year German
(4 Class Hrs./Wk.) 4 Credits Each
Introduction to the German language through development of pronunciation, grammar, reading, speaking and listening skills. Prerequisite: Must be taken in sequence or instructor approval.

GL 101, 102, 103
Second-Year German
(4 Class Hrs./Wk.) 4 Credits Each
Development of language skills through reading, conversation, pronunciation exercises, vocabulary build-up and grammar review leading to a more sophisticated understanding of the language. Application of grammatical advancement in numerous exercises and weekly lab sessions. Prerequisite: Must be taken in sequence or instructor approval.

GS 104, 105, 106
Physical Science
(3 Class-3 Lab Hrs./Wk.) 4 Credits Each
Overview of the fields of astronomy, geology, oceanography, and meteorology. All topics treated descriptively. Students with arithmetic skill deficiencies are assigned tutorial sessions in the mathematics laboratory. Consult with instructor if prior college-level courses in the sciences have been completed. Recommended in sequence.

HE 250
Personal Health
(3 Class Hrs./Wk.) 3 Credits
A condensed one term treatment of the personal health components necessary to make helpful decisions in preparation for a productive life, actively and knowledgeably contributing to the health programs of modern American society.

HE 252
First Aid
(5 Class-Lab Hrs./Wk.) 3 Credits
Emergency treatment of injuries or sudden illnesses. Upon successful completion of Red Cross requirements, the student may receive Red Cross advanced first aid certification.

HE 260
Crash Injury Management
(40 Class-Lab Hrs. Total) 3 Credits
Procedures for emergency basic care. For police officers and other officials who are first responders to traffic accidents and who may not have special equipment or space in their vehicles for transport of supine victims. Prerequisite: Current CPR certification or instructor approval.

Hst 101, 102, 103
History of Western Civilization
(3 Class Hrs./Wk.) 3 Credits Each
Surveys the origins and development of Western civilization from ancient times to the present.

Hst 201, 202, 203
History of the United States
(3 Class Hrs./Wk.) 3 Credits Each
Hst. 201: Development of the American political and cultural tradition, emphasizing those issues and themes connecting the present with the past. Hst 202: Surveys the middle period of the United States. Hst 203: Surveys the modern period of the United States.

Hst 220
Labor History
(3 Class Hrs./Wk.) 3 Credits
Origins and growth of the labor movement in the United States, from the master-servants stage of American colonial times to the stage of industrial democracy. Offered alternate years.

Hst 228
Women in United States History
(3 Class Hrs./Wk.) 3 Credits
Historical examination of the roles and status of women in American life. Features Anglo, minority and immigrant women, focusing upon family, religion, education and community service, as well as upon economic, political, legal and intellectual matters. Emphasizes the contribution which the women's rights movement has made in the development of democratic institutions, particularly the United States Constitution and the state and federal levels of government. Offered alternate years.

Hst 264
Afro-American History
(3 Class Hrs./Wk.) 3 Credits
Surveys the Afro-American's role in American history from African and colonial background to the present. Offered alternate years.

J 220
Newswriting
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Introduction to journalistic practices associated with gathering information, taking notes, interviewing, writing for various mass media audiences. Review of grammar, spelling, sentence structure, punctuation. Prerequisite: Wr 121 and Wr 122 English Composition or instructor approval. In addition, students must pass a typing proficiency exercise during the first laboratory session.

J 224
Mass Media and Society
(3 Class Hrs./Wk.) 3 Credits
Focuses on the characteristics of the media of mass communications (primarily newspapers, radio, television, magazines, books, and films) and the ways they influence (or are influenced by) society. Through readings, lectures (including guest speakers), field trips, films and discussion, each medium is studied individually, including its relationship to other media.

Mth 10
Basic Algebra
(3 Class-1 Lab Hr./Wk.) 3 Credits
For students who need a review of elementary algebra or who have never had high school algebra. Properties of real numbers, factoring, solving first and second degree equations, the quadratic formula, exponents, roots and radicals. Offered by lecture and by individualized instruction.

Mth 95
Intermediate Algebra
(4 Class Hrs./Wk.) 4 Credits
For students who have had only one year of high school algebra and those who need a review in preparation for college algebra. Properties of real numbers, polynomials, algebraic fractions, exponents, roots, radicals, first and second degree equations and inequalities, functions and graphs, systems of equations, logarithms. Prerequisite: Mth 10 Basic Algebra or instructor approval.

Mth 101
College Algebra
(4 Class Hrs./Wk.) 4 Credits
For students who have had two years of high school algebra. Normally considered the first course in the mathematics transfer program. Properties of real numbers, polynomials, exponents, roots, radicals, relations and functions, exponential and logarithmic functions, systems of equations, matrices, determinants, complex numbers, theory of equations, sequences, series, binomial theorem. Prerequisite: Mth 95 Intermediate Algebra or instructor approval.

Mth 102
Trigonometry
(4 Class Hrs./Wk.) 4 Credits
For students planning to take Mth 200 and having little or no background in trigonometry. Circular functions, trigonometric functions, identities, conditional equations, inverse functions, solution of triangles, law of sines, law of cosines, vectors, graphs, complex numbers. DeMoivre's theorem. Prerequisite: Mth 101 College Algebra or instructor approval.

Mth 103
Probability and Statistics
(4 Class Hrs./Wk.) 4 Credits
For students majoring in the arts, sciences, and business. The role of statistics in making inferences based on observed data, and the role of the com-

puter and calculator in solutions of statistical problems. Measures of central tendency, median, mean, measures of variability, variance, standard deviation, empirical rule, probability distribution, central limit theorem. Chebysheff's theorem, statistical inference, solutions of statistical problems using the computer and electronic calculator.

Mth 106
Elementary Calculus
(4 Class Hrs./Wk.) 4 Credits
For business, social science and other students whose programs require only one term of calculus. Includes the usual concepts of a first course in calculus along with those topics which are necessary for the solution of business and economics problems. Real number system, relations and functions, sequence and series, differentiation, applications of the derivative, functions of several variables, the definite integral, integration. Trigonometry is not required. Prerequisite: Mth 101 College Algebra or instructor approval.

Mth 151
Programing Digital Computers
(4 Class Hrs./Wk.) 4 Credits
Introduction to computers and to computer programing for students with minimal mathematics background. Students will use college computer facilities to solve a variety of problems. Coding in the BASIC language.

Mth 161, 162, 163
Mathematics for Business Management and Social Sciences
(4 Class Hrs./Wk.) 4 Credits Each
Especially suitable for majors in the social sciences, business administration and the humanities. Not intended as preparation for Mth 200. Topics from matrix theory, graph theory, linear systems, linear programing, probability, analytic geometry, decision theory, algebra, statistics, and elementary calculus will be included. Primary emphasis will be on applications and problem solving techniques. Prerequisite: Mth 95 Intermediate Algebra or instructor approval.

Mth 191, 192, 193
Mathematics for Elementary Teachers
(3 Class-1 Lab Hr./Wk.) 3 Credits Each
Basic concepts of mathematics for prospective elementary teachers. Mth 191: Metric activities, truth tables, sets, operations on sets, relations and functions, operations on the set of whole numbers and integers, solving first degree equations and inequalities. Mth 192: History of numeration systems, different number bases, factorization, operations on the set of rational numbers, informal geometry. Mth 193: Metric system, informal geometry of measurement, graphing, systems of linear equations, solving quadratic equations, introduction to probability and statistics.

Mth 200, 201, 202, 203
Calculus with Analytic Geometry
(4 Class Hrs./Wk.) 4 Credits Each
Standard sequence for mathematics and science students. Introduces the student to the theory and application of the elements of calculus and analytic geometry. Stresses manipulative skills and problem solving techniques necessary for further work in mathematics, engineering, and the sciences. Prerequisite: For Mth 200; Mth 101 College Algebra or equivalent. For Mth 201: Mth 200 Calculus with Analytic Geometry and Mth 102 Trigonometry or equivalent. For Mth 202: Mth 201 Calculus with Analytic Geometry. For Mth 203: Mth 202 Calculus with Analytic Geometry.

Mth 221
Applied Differential Equations
(4 Class Hrs./Wk.) 4 Credits
Introduces ordinary differential equations. Includes first order linear differential equations, second order differential equations, series solutions, and systems of equations. Prerequisites: Mth 202 Calculus with Analytic Geometry or instructor approval.

Mth 233
Introduction to Numerical Computation-FORTRAN
(4 Class Hrs./Wk.) 4 Credits
Basic principles of computation, programing a computer in an algebraic language (FORTRAN). Prerequisite: Mth 101 College Algebra or instructor approval.

MuP 171-192,271-292
Individual Lessons
(1/2 Hour Lesson-6 Practice Hrs./Wk.) 2 Credits
Individual instruction in voice or instruments. Recitals may be required. Regular tuition plus special fee of $50. No more than 12 credits on a major instrument and 6 credits on a secondary instrument of individual lessons numbered MuP 171-192 and 271-292 may be applied to an associate degree. Prerequisite: Instructor approval.

Mus 101, 102, 103
Music Fundamentals
(3 Class Hrs./Wk.) 3 Credits Each
Basic theory structure and literature of music leading to the study of notation, scales, key relationships, and primary intervals. Remedial instruction for music majors who are deficient in preparation for work in Mus 111 Music Theory I. May be taken concurrently with Music 111 or be followed by Music 111 or 112 to form a sequence for non-majors. May also be taken as a non-sequence general interest course.

Mus 105
Music Appreciation
(3 Class Hrs./Wk.) 3 Credits
Introduction to the literature of music for people with little or no background in "classical" music. Chronologically surveys music literature from the beginnings of European civilization to the present, utilizing recordings and live performance where possible. Emphasizes works and composers of acknowledged major stature. Centers on basic formal, rhythmic and melodic analysis and relationships of social factors, including lives of composers and trends in art forms, to music of given periods.

Mus 111, 112, 113
Music Theory I
(5 Class Hrs./Wk.) 4 Credits Each
Fundamentals of diatonic harmony approached through basic harmonic and melodic materials, leading to the study of intervals, melodic motion, triads, inversions, modes, embellishing tones, dominant seventh chords, and other seventh chords.

Mus 131, 132, 133
Group Piano
(2 Class Hrs./Wk.) 2 Credits Each
Basic classroom instruction for music majors and others whose rating on a keyboard proficiency test does not warrant applied keyboard study. Introduces the functional background needed to proceed in music theory at the keyboard.

Mus 134, 135, 136
Group Voice
(2 Class Hrs./Wk.) 2 Credits Each
The art of using the voice for singing, including breathing techniques, performance suggestions, sight-singing, introduction to pertinent repertoire, and basic music theory necessary for independent practice.

Mus 137, 138, 139
Group Guitar
(2 Class Hrs./Wk.) 2 Credits Each
Introduces and develops the skills and techniques required for solo guitar performance with application to music of the classical and folk repertoire. Also presents sight-reading, ensemble playing, and the improvisation of simple accompaniments.

Mus 141, 142, 143
Group Woodwind
(2 Class Hrs./Wk.) 2 Credits Each
Classroom instruction in the basic technique of woodwind playing.

Mus 144, 145, 146
Group Brass
(2 Class Hrs./Wk.) 2 Credits Each
Classroom instruction in the basic technique of brass playing.

Mus 147, 148, 149
Group Percussion
(2 Class Hrs./Wk.) 2 Credits Each
Classroom instruction in the basic technique of percussion playing.

Mus 151, 152, 153
Group Strings
(2 Class Hrs./Wk.) 2 Credits Each
Classroom instruction in the basic techniques of playing stringed instruments. Prerequisite: Instructor approval.

Mus 167
Techniques of Accompanying
(3 Class-Lab Hrs./Wk.) 2 Credits
Lecture and in-class performance of instrumental and vocal compositions according to period, style, and musicianship concepts.

Mus 168
Techniques of Keyboard Improvisation
(1 Class-2 Lab Hrs./Wk.) 2 Credits
Develops an understanding and appreciation of improvisation at the piano keyboard by performing and listening to techniques in various styles and periods of music, including jazz. Prerequisite: Instructor approval.

Mus 201
Introduction to Music and its Literature
(3 Class Hrs./Wk.) 3 Credits
Develops technique for listening critically and analytically to folk music found in the U.S. through a study of the repertoire of folk music of the West, Black Africa, and the Native American Indian.

Mus 202
Introduction to Music and Its Literature
(3 Class Hrs./Wk.) 3 Credits
The musical forms and practices developed in the 19th century, beginning with Schubert as a link between the Classical and Romantic periods (Mus 201). Emphasizes development of the technique for listening critically and analytically.

Mus 203
Introduction to Music and Its Literature
(3 Class Hrs./Wk.) 3 Credits
Survey of musical styles since Brahms and Mahler, including selected masterpieces by such composers as Debussey, Stravinsky, Bartok, Schoenberg, Copland, Kodaly, Walton, Ives, Barber, Harris, Hanson, Carter, Dello Joio, Hindemith, Berg, Stockhausen, and other 20th century composers. Designed to cultivate an understanding and intelligent enjoyment of contemporary music, emphasizing development of the technique for critical and analytical listening.

Mus 204
Introduction to Folk Music in America
(3 Class Hrs./Wk.) 3 Credits
Develops technique for listening critically and analytically to folk music found in the U.S. through a study of the repertoire of folk music of the West, Black Africa, and the Native American Indian.

Mus 205
Introduction to Jazz History
(3 Class Hrs./Wk.) 3 Credits
Offers an understanding and appreciation for listening critically and analytically to jazz idioms by studying the jazz repertoire of the U.S. as related to its Black American past.

Mus 211, 212, 213
Music Theory II
(4 Class-1 Lab Hr./Wk.) 4 Credits Each
Further study of the harmonic and melodic characteristics of the 18th, 19th, and early 20th century music, with emphasis on modulation, chromatic harmony, and style. Follows Music Theory I. Prerequisite: Mus 111, 112, 113 Music Theory I or instructor approval.

Mus 281
Piano Pedagogy
(2 Class-1 Lab Hr./Wk.) 2 Credits
Comparative studies of piano instruction methods, single and group instruction and conceptual learning processes to enable the teacher to develop a personal approach to piano instruction.

Mus 285
Comprehensive Musicianship-Level II
(24 Class Hrs. Total) 2 Credits
Preparation of a notebook of music concepts relating to required learning resources. Some composition, a short synopsis of required reading, attendance and participation in all classes studying Music for Piano, Book II. Prerequisite: Instructor approval.

Mus 292
Music Theatre
(1 1/2 Lab Hrs./Wk./Credit) 1-3 Credits
Introduction to rehearsal and performance of materials related to the musical theatre media. Prerequisite: Instructor approval.

Mus 294
Chamber Ensemble
(3 Class Hrs./Wk.) 2 Credits Each
The study and performance of string, woodwind, brass, percussion, keyboard and other chamber literature. No more than 24 credits of Mus 294, 295, 296 and 297, singly or combined, may be applied to a degree program. A pass-no credit option is available for non-majors. Prerequisite: Instructor approval.

Mus 295
Band
(3 Class Hrs./Wk.) 2 Credits Each
The study and performance of symphonic band, wind symphony, and jazz ensemble literature. No more than 24 credits of Mus 294, 295, 296 and 297, singly or combined, may be applied to a degree program. A pass-no credit option is available for non-majors. Prerequisite: Instructor approval.

Mus 296
Orchestra
(3 Class Hrs./Wk.) 2 Credits Each
The study and performance of symphony, baroque, and other chamber orchestra literature. No more than 24 credits of Mus 294, 295, 296 and 297, singly or combined, may be applied to a degree program. A pass-no credit option is available for non-majors. Prerequisite: Instructor approval.

Mus 297
Chorus
(3 Class Hrs./Wk.) 2 Credits Each
The study and performance of symphonic and concert choir, madrigals, chamber choir, vocal jazz, college and community chorale, and other literature. No more than 24 credits of Mus 294, 295, 296 and 297, singly or combined, may be applied to a degree program. A pass-no credit option is available for non-majors. Prerequisite: Instructor approval.

Mus 298
Opera Workshop
(1 1/2 Class-Lab Hrs./Wk./Credit) 1-3 Credits
The rehearsal and performance of materials related to the production of opera. A maximum of six credits may be applied to an associate degree. Prerequisite: Instructor approval.

OA 111, 112, 113
Shorthand
(2 Class-3 Lab Hrs./Wk.) 3 Credits Each
Students practice writing abbreviated forms and a 2,500-word vocabulary of common business words. Classroom time is devoted to theory presentation, spelling and punctuation review, dictation and transcription of business communications. Introduces notetaking and summarizing tasks.

OA 121
Typing I
(2 Class-3 Lab Hrs./Wk.) 3 Credits
A basic typewriting course which includes introduction to the keyboard, adjusting the machine, managing the paper, and controlling the keys by touch. Applications include tabular centering, blocked business letters, and simple manuscripts.

OA 122
Typing II
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Continuation of OA 121 Typing I. Emphasizes application of typing skill to moderately complex letters, tables, memos and manuscripts. Includes drills to increase production words a minute (PWAM) as well as remedial, speed, and accuracy building exercises. Prerequisite: OA 121 Typing I or instructor approval.

OA 123
Typing III
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Emphasizes attainment of a vocational level typing rate (PWAM) on office-type problems. Exercises include variety in letter styles and business forms. Prerequisite: OA 122 Typing II or instructor approval.

OA 124
Typing Skill Building
(2 Class-3 Lab Hrs./Wk.) 3 Credits
A finishing course designed to prepare the student for an entry-level position. Prerequisite: OA 123 Typing III or instructor approval.

OA 125
Mathematics for the Office
(3 Class Hrs./Wk.) 3 Credits
The development of speed and accuracy

in business-related mathematical computation necessary in day-to-day business operations.

OA 211, 212, 213
Applied Shorthand
(2 Class-3 Lab Hrs./Wk.) 3 Credits Each
Students review shorthand principles, study specialized vocabularies, build speed to take verbatim notes, and develop skill in transcription techniques. Integrates shorthand, typing, and business English skills. Prerequisite: OA 113 Shorthand and OA 123 Typing III or instructor approval.

OA 220
Business Machines
(5 Class Hrs./Wk.) 3 Credits
Introduction, methods, and skill development in operation of modern office calculating machines. Prerequisite: 4.200 Practical Mathematics or instructor approval.

OA 240
Filing and Records Management
(3 Class Hrs./Wk.) 3 Credits
Basic filing procedures for business records storage and control. Emphasizes alphabetic systems with numeric, geographic, and subject variations.

OA 280
Cooperative Education: Secretarial
(4 Hrs./Wk./Credit) 1-11 Credits/Term
(18 Credits Maximum)
Actual business experience under supervision with related readings. Conducted through the cooperation of local merchants. For credit in two-year programs only.

PE 185
Physical Education (Men and Women)
(3 Lab Hrs./Wk.) 1-2 Credits/Term
Various activities taught for physiological and recreational values. Five terms required for lower division transfer curricula. Two different physical education activities are permitted per term, provided that beginning, intermediate or advanced courses in the same activity are not taken simultaneously. One term required for vocational-technical curricula. No more than six credits of PE 185 may be applied to an associate degree.

PE 194
Professional Activities
(Men and Women)
(3-6 Lab Hrs./Wk.) 1-2 Credits/Term
For physical education majors. Method, teaching techniques, and basic skills. No more than six credits of PE 194 may be applied to an associate degree.

PE 294
Professional Activities
(Men and Women)
(3-6 Lab Hrs./Wk.) 1-2 Credits/Term
For physical education majors. Method, teaching techniques, and basic skills. No more than six credits of PE 294 may be applied to an associate degree.

Ph 201, 202, 203
General Physics
(4 Class-2 Lab Hrs./Wk.) 4 Credits Each
Topics from classical and modern physics, including mechanics, heat, light, electrical theory and atomic structure. Mathematical rigor limited to algebra and trigonometry. Not for majors in engineering, physical sciences, or others whose programs require calculus. Students with algebra skill deficiencies assigned tutorial sessions in the mathematics laboratory. Must be taken in sequence. Prerequisites: None. Mth 101 College Algebra suggested; Mth 102 Trigonometry helpful.

Ph 207, 208, 209
Introductory Classical Physics
(4 Class-2 Lab Hrs./Wk.) 4 Credits Each
Mechanics, waves, heat, light and electrical theory, and a brief introduction to modern topics. Meets needs of majors in physics, chemistry, engineering and mathematics. Must be taken in sequence. Prerequisites: For Ph 207: Mth 106 Elementary Calculus or concurrent enrollment in Mth 200 Calculus with Analytic Geometry. For Ph 208, Mth 106 Elementary Calculus or concurrent enrollment in Mth 201 Calculus with Analytic Geometry.

Phl 201
Problems of Philosophy
(3 Class Hrs./Wk.) 3 Credits
Intended for students for whom this will be the first and last course in philosophy as well as those who will take more advanced courses. Views philosophy as a discipline integrating the sum of human knowledge to "see it whole." Emphasizes the applied nature of philosophy in order to help the student develop a concept of self in relation to the world. Stresses not only the great historical ideals of East and West, but also life and experience in the 1970s.

Phl 202
Elementary Ethics
(3 Class Hrs./Wk.) 3 Credits
Intended for students who have had no previous training or study in philosophy. Addresses the main ethical problems of questions that have confronted mankind throughout all time, i.e., nature of the "good," what is the good life, propriety of certain courses of conduct, religious vs. secular basis for values, nature of the self, meaning of death, freedom vs. determinism. Primarily discussion oriented.

Phl 203
Elementary Logic
(3 Class Hrs./Wk.) 3 Credits
For those whose interests may not center on the formal rules and procedures of symbolic logic. Emphasizes the practical rather than theoretical approach. Relevant to the needs of a society deluged by argumentation, most of which is fallacious. Intended to acquaint students with the devices and ploys which undercut the rational process.

PS 201, 202, 203
American Governments
(3 Class Hrs./Wk.) 3 Credits Each
PS 201, PS 202: Institutions and their relation to modern American society. Economic, social, and ideological aspects of modern America in relation to our national goals, emphasizing government institutions. PS 203: Introduces American political institutions and their relationship to the broad American community. Includes an overview of political as well as economic and social aspects of our society, and their relationship to our national goals. Explores the practical operation and contemporary reforms in government at the state and local levels.

PS 205
International Relations
(4 Class Hrs./Wk.) 4 Credits
Surveys the concepts of imperialism and colonialism; war as a instrument of national policy; the balance of power and the balance of terror. Examines conflict and change in Asia, Latin America, Africa, and the Middle East; the foreign policies of the Soviet Union, the United States, China and Japan; the problems of national sovereignty, propaganda, espionage; and the future of the world community in the nuclear and space age.

PS 215
Contemporary Middle East
(3 Class Hrs./Wk.) 3 Credits
Surveys the Middle Eastern area from the late nineteenth century to the present time, covering the influence of the West on Middle Eastern society; the formation of political, cultural, and spiritual values within the Arab, Israeli, Persian and Turkish complex. Includes a review of the psychology of political conflict and the moves toward Arab-Israeli reconciliation. Offered upon sufficient demand.

PS 252
Constitutional Law
(3 Class Hrs./Wk.) 3 Credits
Emphasizes the judicial process in constitutional cases; the federal system including the powers and limitations of the judicial, legislative and executive branches of government; state power and the national economy; state taxation and federal power respecting interstate and foreign commerce; intergovernmental immunities and interstate relations. Emphasizes the interplay of the commerce clause; state's rights and the problems of federalism. Reviews the constitutional foundation of our present social structure.

PS 254
Civil Liberties
(3 Class Hrs./Wk.) 3 Credits
In-depth study of the rights and liberties contained in the United States Constitution and of the Supreme Court opinions which define these rights and liberties. The First, Fifth and Fourteenth Amendments are emphasized, including constitutional protection of individual

rights; substantive due process and procedural due process; problems of freedom of speech, religion, and assembly; problems of equal protection of law, and the privileges and immunities clause.

Psy 101
Psychology of Human Relations
(3 Class Hrs./Wk.) 3 Credits
Studies communication and other aspects of interpersonal behavior. Emphasizes actual practice of communication, assertive, and other interpersonal skills, within a context of self-observation and self-change.

Psy 201, 202, 203
General Psychology
(3 Class Hrs./Wk.) 3 Credits Each
Introduces the broad discipline of psychology. Emphasizes psychology's history, its theories and research methods, its current knowledge, and its application to human problems. May serve as preparation for further study in psychology, or it may be taken as an example of the social sciences in a liberal arts education.

Psy 205
Applied Psychology
(3 Class Hrs./Wk.) 3 Credits
Applications of psychological knowledge in such fields as education, business, criminal justice, marriage and family, counseling and psychotherapy, and individual adjustment. Prerequisite: Psy 201 or 202 or 203 General Psychology, or Psy 101 Psychology of Human Relations or instructor approval.

R 201, 202, 203
Great Religions of the World
(3 Class Hrs./Wk.) 3 Credits Each
The many ways the human species expresses its spiritual needs, desires, and aspirations. A survey of the Hindu-Buddhist, Confucian, Taoist, Zoroastrian, Judeo-Christian and Islamic religions.

RL 50, 51, 52
First-Year French
(4 Class Hrs./Wk.) 4 Credits Each
Introduction to and foundation of the French language in an intensive, immersed classroom situation where only French is spoken from the first day. Prerequisite: Instructor approval if not taken in sequence.

RL 60, 61, 62
First-Year Spanish
(4 Class Hrs./Wk.) 4 Credits Each
Introduction to Spanish through dialogue, exercises in pronunciation, and vocabulary. Students are encouraged to build their own vocabulary, both oral and written. Emphasizes correct grammar structure. Prerequisite: Instructor approval if not taken in sequence.

RL 101, 102, 103
Second-Year French
(4 Class Hrs./Wk.) 4 Credits Each
Review and further in-depth study of the French language as part of the cultural expression of a country. Prerequisites: RL 50, 51, 52 First-Year French or instructor approval.

SFE 280
Supervised Field Experience
(4 Hrs./Wk./Credit) 2-12 Credits/Term (18 Credits Maximum)
Practical work experience for the liberal arts and sciences student in his/her area of major studies according to a prearranged training plan. The student spends four hours per week on the job for each credit in addition to a required, one credit, one-hour seminar per week, to be arranged.

Soc 204
General Sociology
(3 Class Hrs./Wk.) 3 Credits
Primarily concerned with the terms, concepts and theories employed by sociologists in their study of society. Includes social processes, patterns and institutions, and a brief historical overview of the development of social theory and method.

Soc 205
General Sociology
(3 Class Hrs./Wk.) 3 Credits
Utilizes the sociological perspective to analyze contemporary social problems in the United States. Problems are viewed as social in origin, social in definition, and social in solution. Special emphasis is applied to primary social problems.

Soc 206
General Sociology
(3 Class Hrs./Wk.) 3 Credits
The sociology of everyday life as developed by Erving Goffman. Emphasizes descriptive studies, relating forms of interpersonal relationships, conceptual studies, and definitions of the situation by participants. A secondary emphasis centers on those research methods used in making both descriptive and inferential statements about human behavior in groups.

Soc 207
Juvenile Delinquency
(3 Class Hrs./Wk.) 3 Credits
An overview of juvenile delinquency and youth crime; theories of crime and delinquency; the police role in dealing with juveniles; laws and procedures designed for the protection of juvenile offenders and victims of parental neglect; juvenile protection services, and state correction facilities; programs for delinquency prevention and youth welfare. Prerequisite: CJ 100 Survey of Criminal Justice System or Soc 204, 205, 206 General Sociology.

Soc 227
Introduction to Social Psychology
(3 Class Hrs./Wk.) 3 Credits
Introduces the methods and theories of social psychology. Bridges the studies of sociology and psychology, including the influence of group membership on perception, attitudes, behavior and socialization, as well as the contributions of an individual to the performance of the group. Particularly appropriate for those who deal with people in a small group setting and who would like to increase their understanding of group dynamics.

Sp 111, 112, 113
Fundamentals of Speech
(3 Class Hrs./Wk.) 3 Credits Each
An overview of the basic fundamentals of speech: communication; private and public communication; intrapersonal, interpersonal, and extra communication. Includes conversational communication, dyadic communication, group discussion and persuasion. Prerequisite: For Sp 113: Sp 111 or Sp 112 Fundamentals of Speech or instructor approval.

Sp 215
Small Group Communication: Process and Theory
(3 Class Hrs./Wk.) 3 Credits
In a world run by committees, it is vital to know how to operate within the confines of that committee structure. An in-depth opportunity for the student to explore the reaches and limitations of group discussion. Prerequisite: Sp 112 Fundamentals of Speech or instructor approval.

Sp 229
Oral Interpretation
(3 Class Hrs./Wk.) 3 Credits
Recommended for improving skills in reading aloud to groups large and small. Particularly for future teachers, public speakers, speech and drama majors, those reading to children, and anyone interested in the enjoyment of reading literature, both prose and poetry, for greater understanding.

Sp 241
Fundamentals of Media
(2 Class-2 Lab Hrs./Wk.) 3 Credits
A general survey of broadcasting, including history, growth, social aspects, laws and policies, station and network organization, programing, standards of criticism, and comparison of broadcast systems. Students relate to practical experience by means of the "hands-on-approach," accomplished by operating the campus closed-circuit radio station and participating in college television.

Sp 262
Radio, Television and Film Speaking
(3 Class Hrs./Wk.) 3 Credits
By simulating working conditions found in radio, television, and filmmaking, students learn speaking techniques utilized in the commercial media. Projects include reading radio and television news, participating in a radio play, and preparing an audition tape.

Sp 270
Projects in Public Speaking
(2 Class Hrs./Wk.) 1 Credit
Principles of argumentation. Tournament speech and participation in intercollegiate forensics are essential parts of the course design. A maximum of four credits may be applied to an associate degree. Prerequisite: Instructor approval.

SSc 104
Introduction to Social Science
(3 Class Hrs./Wk.) 3 Credits
Factual and interpretive study of the culture and institutions of mankind. Brief survey of contemporary political, economic, and social situations and problems, with their relationship to historical periods. Furnishes a background for all social sciences and a basis for understanding contemporary socio-economic problems. Challenges the analytical and critical faculties of students in preparation for more detailed studies in all the social sciences.

SSc 105
Introduction to Social Science
(3 Class Hrs./Wk.) 3 Credits
Introduces political economy in the original sense and how the economic and political dimensions are interwoven with social life. Focuses upon the problem of social values in a very concrete way.

SSc 106
Introduction to Social Science
(3 Class Hrs./Wk.) 3 Credits
Examines the interrelationships between social problems and the social structure of American society.

TA 111
Survey of Theatre Arts
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Introduction to theatre through lecture, class discussion, and the reading and discussion of six plays. Ten functions of the theatre, (the art of the actor, designer, director, costumer, playwright, dancer, and musician, as well as concern for style, limitations and relationships between the performing arts) are considered in each of six great periods, beginning with the Greeks and progressing through to the Elizabethans.

TA 112
Survey of Theatre Arts
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Reading of plays and concern for the 10 functions of theatre (TA 111) continues. Emphasis shifts, however, from classicism to the humanism of the Renaissance and to the study of a theatre dominated less by an oppressive church and aristocracy than by interest in the needs of people on all levels of society. Prerequisite: TA 111 Survey of Theatre Arts.

TA 113
Survey of Theatre Arts
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Continued play reading and critical evaluation exercises (established in TA 111 and TA 112). Emphasis shifts from the theatre of humanism and realism to the concern for the development of a modern theatre best defined with terms like Theatre of: Expressionism, Impressionism, Naturalism, the Absurd, Renalt, Cruelty, Togetherness, Confrontation, Happiness, and similar concepts. Prerequisites: TA 111 and TA 112 Survey of Theatre Arts.

TA 121
Fundamentals of Acting Technique
(3 Class Hrs./Wk.) 3 Credits
Explores the craft of acting through small-group discussion and individual exercise. Potential for expression through voice and body (the actor's instrument) is explored. Exercises in voice training, movement, concentration, imagination, critical observation and characterization are emphasized.

TA 122
Fundamentals of Acting Technique
(3 Class Hrs./Wk.) 3 Credits
Continuation of character analysis, interaction, vocal, physical and mental preparation, emphasizing shifts from solo to duet acting, with additional attention to scene analysis. Prerequisite: TA 121 Fundamentals of Acting Technique or instructor approval.

TA 123
Fundamentals of Acting Technique
(3 Class Hrs./Wk.) 3 Credits
Continuation of acting exercises, emphasizing shifts from duet acting to total scene development and audition preparation. Post graduate and professional opportunities are explored. Prerequisites: TA 121 and TA 122 Fundamentals of Acting Technique or instructor approval.

TA 124
Readers' Theatre
(3 Class Hrs./Wk.) 3 Credits
Involves ensemble performance of prose, poetry and drama for audience response. Although choreography and costume are employed, emphasis is not on acting, but on the oral interpretation of literature. Special stress is also placed on the student's planning and selection of appropriate readers' theatre programs. Prerequisite: Sp 229 Oral Interpretation.

TA 151, 152, 153
Television Workshop
(4 Class-Lab Hrs./Wk.) 3 Credits Each
Advanced television production techniques for the student with previous experience. Students work on individual projects and studio programing to enhance their expertise in the various areas of electronic media production. Prerequisite: FA 151, 152, 153 Video Production I, II, III or instructor approval.

TA 239
Creative Drama
(3 Class Hrs./Wk.) 3 Credits
A relaxed look at acting and dramatic production through the medium of a recreational play. Provides a learning opportunity for those who wish to become involved in community and civic theaters. Usually offered only summer term.

TA 261
Technical Theatre: Costuming
(3 Class Hrs./Wk.) 3 Credits
Focuses on specialized areas: costuming, scene design and special effects.

TA 262
Technical Theatre: Scenecrafts
(3 Class Hrs./Wk.) 3 Credits
Focuses on the organization of production as well as introducing work in more specialized areas: property construction, special effects, make-up, costume design and scene design. Students are expected to crew for on-going productions and to build scenery. Prerequisite: TA 261 Technical Theatre: Costuming.

TA 263
Technical Theatre: Stage Lighting
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Introduction to the design of stage, television and motion picture lighting. Covers lighting instruments, styles, and design of the lighting plot. Students work on various productions and design lighting for different plays and television productions. Prerequisites: TA 261 and 262 Technical Theatre: Costuming and Scenecrafts.

TA 270
Stage Makeup
(1 Class-4 Lab Hrs./Wk.) 3 Credits
Introduces the techniques of makeup for the stage and television. Includes fundamental training in basic and corrective makeup, character makeup, techniques for hair, basic prosthetics, aging, and non-realistic makeup. Students are expected to plan and apply makeup for the drama department productions during the term.

TA 280
Theatre Rehearsal and Performance
(3 Lab Hrs./Wk./Credit) 1-3 Credits
Principles of acting and dramatic production through a "hands on" approach, and actual theatrical experience at the college level. Provides an educational environment where learning is not a book and classroom but a memorable event. For non-theatre majors. A maximum of six credits may be applied to an associate degree.

TA 285
Theatre Production Workshop
(3 Class-Lab Hrs./Wk./Credit) 1-3 Credits
Accommodates the more experienced acting student involved in theater as a major. Focuses on the finer points of acting and guides the student's abilities and potential in a stricter, but more profession-oriented direction during participation in a dramatic production. A maximum of six credits may be applied to an associate degree. Prerequisites:

TA 280 Theatre Rehearsal and Performance and instructor approval.

Wr 49
English Fundamentals
(3 Class Hrs./Wk.) 3 Credits
Examines the principles of expository writing. For liberal arts students who need additional preparation for the demands of Wr 121 English Composition.

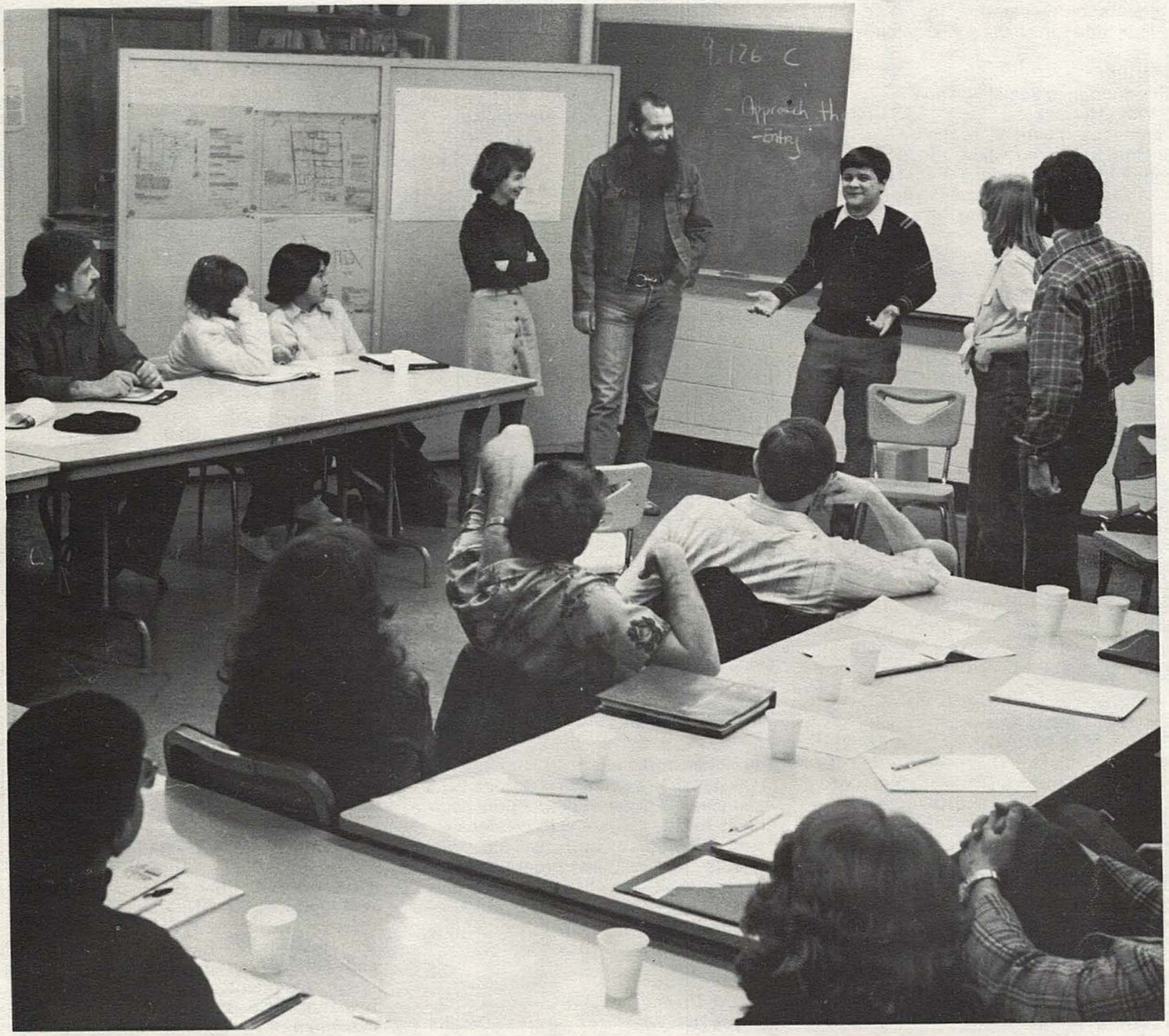
Wr 121
English Composition
(3 Class Hrs./Wk.) 3 Credits
Students develop skills in writing exposition, description, narration, and persuasion. Selected readings illustrate excellence in style, and demonstrate types of writing being practiced. Also emphasizes correction of common errors and vocabulary improvement. Requires eight to ten essays throughout term.

Wr 122
English Composition
(3 Class Hrs./Wk.) 3 Credits
Covers library research skills and the application of these, with guidance, in researching subjects of student's choice. Emphasizes techniques of multiple source writing and documentation. Requires 20-25 typed pages of research material, following published standards. Prerequisite: Wr 121 English Composition.

Wr 123
English Composition
(3 Class Hrs./Wk.) 3 Credits
Refines the student's ability to use logic in personal writing by analyzing its use in the various works studied. Several essays are written during the term.

Wr 241, 242, 243
Introduction to Imaginative Writing
(3 Class Hrs./Wk.) 3 Credits Each
Introductory sequence for students interested in the techniques of creative writing in varied forms. Wr 241: Fiction; Wr 242: Poetry; Wr 243: Plays. Prerequisites: Wr 121 English Composition. Literature sequence recommended.

Z 201, 202, 203
General Zoology
(3 Class-3 Lab Hrs./Wk.) 4 Credits Each
Survey of the basic principles of biology pertaining to animals. Z 201: Chemical and physical basis of life, cell structure and function, genetics, energy transformations; Z 202: Structure and function of systems; Z 203: Survey of animals.



VOCATIONAL-TECHNICAL EDUCATION

1.100
Vocational Communications
(3 Class Hrs./Wk.) 3 Credits
Basic communication skills, with strong emphasis on writing appropriate to the individual's vocational field.

1.102
Vocational Communications
(3 Class Hrs./Wk.) 3 Credits
A continuation of the basic communication skills taught in 1.100. Extensive practice in writing as may be required both prior to and during employment. Prerequisite: 1.100 Vocational Communications or instructor approval.

2.107
Keypunch I
(3 Class-2 Lab Hrs./Wk.) 3 Credits
Orientation and practice on the keypunch and verifying machines for the beginning card punch operator. Includes the design and use of the punched cards as a source document for various business purposes. Prerequisite: OA 121 Typing I or instructor approval.

2.108
Keypunch II
(3 Class-2 Lab Hrs./Wk.) 3 Credits
Continuation of 2.107 Keypunch with emphasis on speed building, special features and operating techniques. Prerequisite: 2.107 Keypunch I.

2.122
Programing-RPG I
(3 Class-2 Lab Hrs./Wk.) 3 Credits
Introduction to the Report Program Generator language. Laboratory experience writing and running programs. Development of the basic knowledge for applying the RPG programing language in given business situations, problem definition, analysis, and documentation.

2.124
Programing - Advanced RPG
(3 Class-2 Lab Hrs./Wk.) 3 Credits
Emphasizes file organization, data retrieval, sorting, table look-up, and disk management. Prerequisite: 2.122 Programing-RPG-I.

2.128
Business Data Processing — COBOL II
(3 Class-2 Lab Hrs./Wk.) 3 Credits
Advanced COBOL concepts. Emphasizes data management and manipulation, direct access devices and hardware concepts. Student will build a detailed knowledge of COBOL and its use in solving business problems. Prerequisite: BA 231 Business Data Processing — COBOL I.

2.280
Cooperative Work Experience
(Business) 1-11 Credits/Term
(24 Credits Maximum)
For students who desire practical work experience as a part of their business training. The student must work in an approved business and under the supervision of the employer and the College coordinator. A one credit Job Search Techniques class is required during the first on-campus term a student is registered for work experience.

2.281, 2.282, 2.283
Job Search Techniques Seminar
(1 Class Hr./Wk.) 1 Credit Each
(3 Credits Maximum)
See page 30 for course description.

2.300
Introduction to Business
(3 Class Hrs./Wk.) 3 Credits
A general overview of American business from a historical perspective through its current evolution. Reviews functional areas of business including management, finance, and marketing. Studies international business along with legal and ethical responsibilities.

2.308
Advertising I
(3 Class Hrs./Wk.) 3 Credits
Introduction to advertising as a factor in the marketing process. Study of the advertising agency, the campaign, and the function of research and testing. Detailed examination of the selection of media: newspaper, magazine, broadcasting, outdoor, direct mail, and point-of-sale.

2.315
Personal Development
(2 Class Hrs./Wk.) 2 Credits
For the prospective business person. Includes development of self-confidence, self-awareness, grooming, wardrobe selection, and voice control.

2.321, 2.322
Business Law II, III
(3 Class Hrs./Wk.) 3 Credits Each
Introduction to law, legal rights and duties, formation of contracts, operation and discharge of contracts, law of sales of goods, bailments, law of negotiable instruments. Laws of insurance, agencies, employers and employees, business organization, real property, and laws affecting social welfare.

2.324
Auditing
(3 Class Hrs./Wk.) 3 Credits
Overview of basic auditing concepts, principles, and practices. Prerequisite: BA 212 Principles of Accounting II.

2.327
Introduction to Business Statistics
(3 Class Hrs./Wk.) 3 Credits
Introduction to statistics and probability. Primary emphasis on statistical description and the elements of probability.

2.330
Outlines of Economics
(3 Class Hrs./Wk.) 3 Credits
Helps non-economics students develop the kind of "economic reasoning" necessary to analyze and understand the vital issues confronted in a rapidly changing world. Emphasizes a set of basic economic tools, and demonstrates how these tools can be applied to such topics as minimum wage legislation, inflation and unemployment, the dollar and trade in international markets, fiscal policy and taxation, and the role of money.

2.331
Economic Development of the United States
(3 Class Hrs./Wk.) 3 Credits
Examines the factors which influenced the rate of growth of the American economy and the well-being of various segments of our society, as the country grew. Traces the development of economic institutions including industry, agriculture, commerce, transportation, labor, and finance, emphasizing the period from 1930 to the present. Examines the increasing role of government, in particular the regulatory agencies.

2.332
Contemporary United States Economic Issues
(3 Class Hrs./Wk.) 3 Credits
Examines contemporary economic problems and issues, with particular attention to their effect on American society. Analyzes governmental economic policies and practices affecting such problems and issues.

2.406
Business Project Study
(3 Hrs./Wk./Credit) 1-8 Credits/Term
(15 Credits Maximum)
Individualized professional level simulated experiences of a business nature. With guidance from the instructor, students choose texts and areas of specialization they wish to pursue. A maximum of 15 credits may be earned. Prerequisite: Instructor approval

2.508, 2.509
Business Mathematics I, II
(3 Class-2 Lab Hrs./Wk.) 4 Credits Each
Reviews addition, subtraction, multiplication, and division, and with these fundamentals develops business applications such as percentages, payroll and taxes, finance charges, inventory, depreciation, insurance, business finance, statistics, and annuities. Prerequisite: For 2.509, instructor approval.

2.512
Office Procedures I
(3 Class Hrs./Wk.) 3 Credits
For the clerical or secretarial student. Provides self-analysis of a student's basic skills and aptitudes. Identifies and simulates procedures in basic and ad-

vanced components of office work. Stresses development and maintenance of typewriting skill. Incorporates recent business practices in copy duplicating, locating information, new communication devices, including phone techniques and the production of quality memos and reports. Legal and medical majors can specialize in related legal or medical procedures.

2.514
Office Procedures II
(3 Class-2 Lab Hrs./Wk.) 4 Credits
The model office concept. Students perform various duties involved in a series of specific business positions. Simulated office environment provides application of experience and skills gained in prior classwork.

2.519, 2.521, 2.523
Business Machines I, II, III
(5 Class-Lab Hrs./Wk.) 3 Credits Each
Introduction to and skill development on the important office machines. Includes ten-key adding machine, full keyboard adding machine, electronic calculator, printing calculator, rotary calculator, transcribing equipment, duplicator, mimeograph, scanner, photocopy and offset.

2.522
Transcription (Word Processing)
(5 Class-Lab Hrs./Wk.) 3 Credits
Includes operation and skill development on transcribing equipment, letter and manuscript layout practice, rough draft typing, and proofreading and editing of typed copy. Prerequisite: OA 121 Typing I or instructor approval.

2.524, 2.525
Business Correspondence I, II
(3 Class Hrs./Wk.) 3 Credits Each
English for business. Provides a review of grammar, usage, and punctuation needed for occupational proficiency. Emphasizes spelling and vocabulary development. Develops the basic skills for correct, simple and tactful expression of ideas. Prerequisites: For 2.525: 2.524 Business Correspondence I or instructor approval.

2.530
Advanced Office Practice I
(5 Class-Lab Hrs./Wk.) 3 Credits
Individual review and drill in office skill areas such as typing, shorthand, letter writing, filing, business machines, duplicating machines, machine transcription, and/or other office practices. Students may emphasize one or more of these skill areas. Prerequisite: Instructor approval.

2.531
General Accounting I
(3 Class Hrs./Wk.) 3 Credits
Beginning accounting, using the balance sheet approach. Extreme importance is assigned to basics to insure that each student has grasped beginning bookkeeping principles. Emphasizes actual problems. Includes statements, accounts, ledgers, journals, banking procedures, purchase and sales, and general reports.

2.532, 2.534
Advanced Office Practice II, III
(2 Class-3 Lab Hrs./Wk.) 3 Credits Each
A block program to improve basic clerical and secretarial skills. Student and instructor decide on a program to meet individual needs. Each day is devoted to intensive practice on one or more weak skills. Some students may be placed in a selected office on campus as part of the reinforcement training. A text common to all class members provides integrated practice in English, typing, transcription, and mathematics. Specific practice for the legal or medical secretary. Individual research projects prepare students for job entry. Prerequisite: OA 113 Shorthand or 2.522 Transcription and OA 123 Typing III or instructor approval.

2.533
General Accounting II
(3 Class Hrs./Wk.) 3 Credits
Individualized continuation of 2.531 General Accounting I; accounting for purchases; sales, including installment and consignment sales; accounting for inventory and prepaid expenses; tangible long-lived assets; owner's equity. Accrual accounting applied to a wholesale business; accounting procedure at end of year; the annual report; and interim financial statements. Prerequisite: 2.531 General Accounting I or instructor approval.

2.535
Basic Legal Terminology
(5 Class-Lab Hrs./Wk.) 3 Credits
Introduction to and skill development in legal terminology. Emphasizes memory work on legal terminology, straight copy typing of legal material and, if the student is prepared, practice in writing Gregg or Century 21 shorthand outlines. Prerequisite: OA 121 Typing I or instructor approval.

2.538
Advanced Transcription
(Word Processing)
(5 Class-Lab Hrs./Wk.) 3 Credits
Continuation of 2.522 Transcription. Builds and strengthens secretarial skills in machine transcription through realistic office experiences. Prerequisite: 2.522 Transcription or instructor approval.

2.539
Legal Transcripton (Word Processing)
(5 Class-Lab Hrs./Wk.) 3 Credits
Introduction to skill development in legal transcription. Emphasizes all forms of legal correspondence, legal documents, and other documents. Prerequisite: OA 121 Typing I or instructor approval.

2.540
Medical Transcription I
(Word Processing)
(5 Class-Lab Hrs./Wk.) 3 Credits
Introduction to medical terminology and transcription. Emphasizes medical letters, summaries and reports, word drills, and phonetic spelling of medical terms. Prerequisite: OA 121 Typing I or instructor approval.

2.542
Medical Transcription II
(Word Processing)
(5 Class-Lab Hrs./Wk.) 3 Credits
Continuation of medical terminology study plus a simulation course in medical transcription, including correspondence and reports from doctors and dentists. Prerequisite: 2.540 Medical Transcription I or instructor approval.

2.550
General Accounting III
(3 Class Hrs./Wk.) 3 Credits
Individualized continuation of 2.533 General Accounting II; accounting for the corporate organization, for capital stock, corporate earnings, corporate bonds, investments and intangible long-lived assets. Accounting for branch operations, the voucher system of accounting, accounting for a manufacturing business, the annual report, and cost accounting. Prerequisite: 2.531, 2.533 General Accounting I, II or instructor approval.

2.552
Accounting: Income Tax
(3 Class Hrs./Wk.) 3 Credits
Introduction to theory and practice in preparation of federal and state individual, partnership, and corporate income tax returns. Emphasizes federal returns.

2.553
Accounting: Payroll
(3 Class Hrs./Wk.) 3 Credits
The laws that created the need for establishing and keeping payroll records. Includes accounting for deduction from wages of such items as group insurance, hospitalization, pension plans, union dues, and purchase of government bonds; different payroll accounting systems used in computing and paying wages and salaries, social security benefits and taxes, federal unemployment insurance and taxes, and state withholdings.

2.557
Credit Procedures
(3 Class Hrs./Wk.) 3 Credits
An overview of consumer and commercial credit in the U.S. economy.

2.564
Fund Accounting I
(3 Class Hrs./Wk.) 3 Credits
Investigation and review of the financial administration of governmental entities and other non-profit organizations, emphasizing the use of "fund" accounting

in planning, budgeting, and controlling the operations. Prerequisite: BA 212 Principles of Accounting I or instructor approval.

2.566
Fund Accounting II
(3 Class Hrs./Wk.) 3 Credits
Continuation of 2.564 Fund Accounting I theory and practice. Prerequisite: 2.564 Fund Accounting I or instructor approval.

2.568, 2.569, 2.570
Business Management I, II, III
(3 Class Hrs./Wk.) 3 Credits Each
2.568: Acquaints the student with the role of small business in American economic history, the probable future of the small business, the advantages, and the problems to be confronted. 2.569: Expands the student's knowledge of small business, focusing on financial control, marketing, and employee relations. 2.570: Applies knowledge previously gained through experience or education to analyzing and solving a variety of small business problems. Prerequisite: For 2.569: 2.568 Business Management I or instructor approval. For 2.570: 2.569 Business Management II or instructor approval.

2.572
Supervision I
(3 Class Hrs./Wk.) 3 Credits
Overview of the total responsibilities of a supervisor in industry. Includes organization, duties and responsibilities, human relations, grievances, training, rating, promotion, quality-quantity control, and management - employee relations. Emphasizes problem-solving or decision-making.

2.574
Supervision II
(3 Class Hrs./Wk.) 3 Credits
Communication for supervisors. Effective speaking and listening. Types of supervisory communication, including techniques and suggestions for more effective transmission and reception of ideas. While written as well as oral communication is included, the act of oral communication itself is stressed. Draws from real life experience and is designed to provide participants with skills pertinent to their specific needs.

2.576
Supervision III
(3 Class Hrs./Wk.) 3 Credits
Developing supervisory leadership. Assists supervisors in understanding the people with whom they work. Emphasizes the psychological aspects, perceptions, learning processes, emotions, attitudes and personalities. Demonstrates the practical application of basic psychology in building better employer - employee relationships through study of human relations techniques.

2.580
Real Estate Practice
(3 Class Hrs./Wk.) 3 Credits
Procedures involved in the listing, selling and closing of residential property. Emphasizes agency relationships, the Oregon Real Estate License Law (ORS 696), listing agreements, purchase agreements, client trust accounts, neutral escrows, co-op transactions, closing procedures, codes of ethics, professional organizations, and related real estate activities.

2.582
Real Estate Office Management
(3 Class Hrs./Wk.) 3 Credits
Methods for establishing and operating a small real estate office. Emphasizes organizational formats, planning, office facilities, financial records, non-financial records, financial reports, office personnel, office manuals, and public relations.

2.584
Real Estate Supervision of Sales Personnel
(3 Class Hrs./Wk.) 3 Credits
Methods for supervising the activities of real estate sales personnel. Emphasizes licensing requirements, planning, selection, training and supervision of sales personnel, motivation, leadership, authority, discipline, communication, advertising and public relations.

2.586
Real Estate Law I
(3 Class Hrs./Wk.) 3 Credits
Surveys Oregon real estate law as it applies to the ownership, use and transfer of real property. Emphasizes basic real property law, legal descriptions, landlord-tenant relationships, transfer of title, real estate contracts, encumbrances, title insurance, recordation, taxes, assessments, and land use controls.

2.588
Real Estate Finance I
(3 Class Hrs./Wk.) 3 Credits
Methods of financing the acquisition of real property. Emphasizes lending laws, the mortgage market, financing documents, foreclosures, governmental loan programs, appraisals, mathematical calculations, taxation, and other methods of financing.

3.280
Cooperative Work Experience
(Marine Technology, Commercial Fishing, Oceanographic Technology)
1-11 Credits/Term
(24 Credits Maximum)
For the student who desires practical work experience in the maritime industry as part of his or her training. The student must work in an approved business and under the supervision of the employer and the College supervisor. A one credit Job Search Techniques class is required during the first on-campus term a student is registered for work experience.

3.281, 3.282, 3.283
Job Search Techniques Seminars
(1 Class Hr./Wk.) 1 Credit Each
(3 Credits Maximum)
See page 30 for course description.

3.321
Hydraulic and Pneumatic Systems I
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Fundamental principles of hydraulic and pneumatic systems. Includes the basic components of hydraulic and pneumatic systems and how they are combined to build up circuits. Stresses application, maintenance, and sizing of equipment. Prerequisite: Instructor approval.

3.339
Blueprint Reading and Sketching
(3 Class Hrs./Wk.) 3 Credits
Introduction to blueprints and drawings as forms of technical communication. Covers the principles of reading and interpreting blueprints and the techniques of making shop sketches as applied to actual industrial parts. Proper use, application and interpretation of symbols, lines, abbreviations, dimensions, and measurements in planning construction and assembly.

3.347
Advanced Blueprint Reading
(3 Class Hrs./Wk.) 3 Credits
Practical experience interpreting blueprints and technical references from industrial trades. Covers blueprints and diagrams in the following areas: architectural, hydraulic, pneumatic, exploded views and schematics, and sheet metal prints and patterns. Prerequisite: 3.339 Blueprint Reading and Sketching.

3.360
Power Systems
(1 Class-3 Lab Hrs./Wk.) 2 Credits
Operation, maintenance, and minor repair of two-cycle and four-cycle gasoline engines. Theory of operation, study of component parts, service adjustment and repair.

3.380
Machine Tools I
(2 Class-4 Lab Hrs./Wk.) 3 Credits
Fundamentals of machines and tools used by the machinist; shop safety, shop rules and procedures; care and use of bench and layout tools, micrometers, verniers and other measuring instruments; application of mathematics to shop use; use of **Machinery's Handbook** for solving shop problems; reading shop drawings; functions and practical use of the engine lathe; chucking, facing, turning, boring and threading.

3.381
Machine Tools II
(2 Class-4 Lab Hrs./Wk.) 3 Credits
Continuation of 3.380 Machine Tools I. Includes technical information and shop projects necessary for the practical application and understanding of theories and principles used in the matching of ferrous and non-ferrous materials, shop

rules and procedures, safety, and further applications of mathematics; measuring instruments, **Machinery's Handbook,** introduction to milling and grinding machines, their operation and set-up. Prerequisite: 3.380 Machine Tools I and instructor approval.

3.382
Machine Tools III
(2 Class-4 Lab Hrs./Wk.) 3 Credits
Continuation of 3.381 Machine Tools II. Includes additional technical information and shop projects necessary for the practical application and understanding of theories and principles used in the machining procedures. Further applications of mathematics, measuring instruments, use of **Machinery's Handbook** to solve shop problems. More on the turning machine group, grinding machines, and milling machines. Prerequisite: 3.381 Machine Tools II or instructor approval.

3.383
Machine Tools IV
(2 Class-6 Lab Hrs./Wk.) 4 Credits
Continuation of 3.382 Machine Tools III. Covers more technical information and shop projects necessary for the practical application and understanding of theories and principles used in the machining procedures. Further applications of mathematics, measuring instruments, use of **Machinery's Handbook** to solve shop problems. Additional experience on the turning machine group, grinding and milling machines. Introduces the shaper, cylindrical grinders, physical properties and the heat treating of metals. Prerequisite: 3.382 Machine Tools III or instructor approval.

3.384
Machine Tools V
(2 Class-6 Lab Hrs./Wk.) 4 Credits
Continuation of 3.383 Machine Tools IV. Covers more technical information and shop projects necessary for the practical application and understanding of theories and principles used in machining procedures. Further applications of mathematics, measuring instruments, use of **Machinery's Handbook** to solve shop problems. Provides the student with more experience on the engine lathe, drilling machines, milling machines, shaper, and grinding machines. Introduces the cutter and tool grinding machines, safety, sharpening of plane milling cutters, end mills, slitting saws, reamers, and stagger tooth milling cutters. Prerequisite: 3.383 Machine Tools IV or instructor approval.

3.385
Machine Tools VI
(2 Class-6 Lab Hrs./Wk.) 4 Credits
Continuation of 3.384 Machine Tools V. Introduction to numerical control. Use of handbooks, mathematical tables, speeds and feeds, tool grinding allowances and tolerances. Students continue to apply knowledge obtained in previous courses in order to gain proficiency. Prerequisite: 3.384 Machine Tools V or instructor approval.

3.386
Machine Tools VII
(2 Lab Hrs./Wk./Credit) 1-4 Credits/Term
Allows industrial mechanics students to increase their laboratory skills, and to apply theory, principle, and methods currently encountered in industry. Prerequisite: Instructor approval.

3.388
Marine Shop Practices I
(2 Class-4 Lab Hrs./Wk.) 3 Credits
Fundamentals of the machines and processes required of the machinist, safety, shop rules and procedures, bench and layout tools, micrometers, vernier calipers and other measuring tools. Application of **Machinery's Handbook** to shop problems, reading shop drawings, chucking, facing, turning, boring and threading of the engine lathe.

3.389
Marine Shop Practices II
(2 Class-4 Lab Hrs./Wk.) 3 Credits
Fundamental processes and use of bench lay-out tools, measuring tools, application of mathematics, application of **Machinery's Handbook** to shop problems. Prerequisite: 3.388 Marine Shop Practices I or instructor approval.

3.390
Auto Engine Systems
(2 Class-4 Lab Hrs./Wk.) 3 Credits
Internal combustion engines; care and use of tools; shop safety; theory of the internal combustion engine; engine rebuilding.

3.391
Auto Suspension Systems
(2 Class-4 Lab Hrs./Wk.) 3 Credits
Steering and suspension systems, front end wheel alignment and wheel balancing; theory of standard and power steering units and steering linkage; and theory of repair of complete automotive brake systems.

3.392
Auto Power Train Systems
(2 Class-4 Lab Hrs./Wk.) 3 Credits
Clutch system; introductory study of gear sets, standard transmission systems and overdrives; conventional and limited slip differentials and universal joints.

3.393
Auto Fuels and Electrical Systems
(2 Class-6 Lab Hrs./Wk.) 4 Credits
Electrical and fuel systems; testing, repairing and adjusting single, two and four barrel carburetors; testing and repair of charging systems; starting systems and other auto electrical circuits.

3.394
Auto Tune-up and Instrumentation
(2 Class-6 Lab Hrs./Wk.) 4 Credits
Methods of testing engine performance using the electronic scope and other instruments. Laboratory sessions cover complete engine ignition systems.

3.395
Auto Shop Practices
(2 Class-6 Lab Hrs./Wk.) 4 Credits
Advanced theory and shop practice; use of testing equipment, diagnosing difficulties in components, making adjustments and repairs under actual shop conditions, and a review of previous work.

3.396
Auto Special Project
(2 Lab Hrs./Wk./Credit) 1-4 Credits
Offers opportunities to increase laboratory skills and to apply theory, principle, and methods currently encountered in industry. Prerequisite: Instructor approval.

3.408, 3.410, 3.412
Ocean Techniques I, II, III
(3 Class-4 Lab Hrs./Wk.) 4 Credits Each
Introduces the scientific method, instrumentation, sampling techniques, laboratory processing of samples, and analysis of data. Various key instruments and laboratory techniques are studied in detail, and field problems are set up to emphasize the above. Each student is required to plan and execute at least one oceanographic cruise and conduct an individual research project during the year. Prerequisites: 3.662, 3.664, 3.666 General Oceanography I, II, III.

3.500
Seamanship I
(3 Class-4 Lab Hrs./Wk.) 4 Credits
Development of skills in areas of boat handling, knotting, splicing, and safe boat operation. Includes instruction in weather, tides, currents, and aids to navigation as related to the mariner.

3.502
Seamanship II
(3 Class-4 Lab Hrs./Wk.) 4 Credits
Concentrated study of navigation, from basic fundamentals to celestial navigation. Covers the application of Loran, Radar, Sonar, direction finders, radios, and fathometers as related to navigation. Prerequisite: 3.500 Seamanship I or instructor approval.

3.504
Seamanship III
(3 Class-4 Lab Hrs./Wk.) 4 Credits
In-depth study of the Rules of the Road. Emphasizes the legal aspects and the liability of a master of a vessel. Prerequisite: Instructor approval.

3.505
Seamanship IV
(1 Class-4 Lab Hrs./Wk.) 2 Credits
Continuation of 3.500, 3.502, 3.504 Seamanship I, II, III. May be repeated three times. Prerequisite: 3.500, 3.502, 3.504 Seamanship I, II, III or instructor approval.

3.506
Seamanship for Oceanographers
(3 Class-4 Lab Hrs./Wk.) 4 Credits
Fundamental seamanship for oceanographic technicians. Emphasizes safety, navigation, and developing basic skills of small boat handling. In addition to classroom time, an eight hour lab every other week is devoted to hands-on experience of small boat handling.

3.507
Charter Boat Deckhand
(3 Class Hrs./Wk.) 3 Credits
For individuals interested in obtaining jobs as deckhands in the charter boat industry. Course materials oriented to United States Coast Guard regulations governing operations of a certified charter vessel.

3.510
Marine Electricity I
(3 Class-2 Lab Hrs./Wk.) 4 Credits
Fundamentals of electron theory and its application. Comparison of AC and DC circuits. The theory and application of electrical tools and measuring instruments. Prerequisite: Instructor approval.

3.511
Marine Electricity II
(3 Class-2 Lab Hrs./Wk.) 4 Credits
Practical work with AC and DC starting motors, DC generators, alternators, regulators, as well as the theory of their operation. Various appropriate field trips are scheduled as they become available. Prerequisite: 3.510 Marine Electricity I or instructor approval.

3.512, 3.514
Marine Biology I, II
(3 Class-3 Lab Hrs./Wk.) 4 Credits Each
Survey of the major animal phyla and plant divisions associated with marine environments. Includes diversity of organisms, form and structures useful in classification, structure and function of selected systems of representative organisms, and natural history. Prerequisite: For 3.514: 3.512 Marine Biology I or instructor approval.

3.515
Marine Electronics I
(3 Class-2 Lab Hrs./Wk.) 4 Credits
Emphasizes use and operation of marine electronic equipment. Emergency diagnosis and repair of at-sea problems. Electrical theory of equipment operation to facilitate trouble shooting.

3.519
Introduction to Commercial Fishing
(2 Class Hrs./Wk.) 2 Credits
Identification of types of vessels and fishing gear used in the commercial fisheries of the Pacific Northwest. Basic operation of these types of gear and the economics of their fisheries.

3.521, 3.522, 3.523
Commercial Fishing Techniques I, II, III
(2 Class-6 Lab Hrs./Wk.) 4 Credits Each
Knowledge and skills of the major commercial fisheries of the Pacific Northwest and Alaska. Includes trawl fishing, crab fishing, salmon trolling, and tuna fishing. Emphasizes the preparation and mending of nets and other gear. Prerequisite: Concurrent enrollment in 3.500, 3.502, 3.504 Seamanship I, II, III.

3.525
Advanced Commercial Fishing IV
(2 Class-6 Lab Hrs./Wk.) 4 Credits
Provides an opportunity for the second year student to research new and different methods of fisheries not covered in 3.521, 3.522, 3.523, Commercial Fishing Techniques I, II, III. The student is responsible for lab attendance on a vessel from all the different fisheries of the area. The class constructs an otter trawl net, shrimp net, or midwater net from start to finish, from net plans. Individual projects may also be undertaken. Prerequisites: 3.521, 3.522, 3.523 Commercial Fishing Techniques I, II, III, or instructor approval.

3.526
Marine Business Management
(3 Class Hrs./Wk.) 3 Credits
Business aspects of commercial fishing; prices, record keeping, settlements, cost and profit analysis, insurance, financing, taxes, etc.

3.530
Galley Cooking and Operation
(1 Class-2 Lab Hrs./Wk.) 2 Credits
Selection of suitable food for quick solid meals that can be prepared while fishing. Instruction in storage and preparation of food on vessels to provide healthful and appealing meals and to minimize spoilage and crushing.

3.531
Marine Refrigeration Systems I
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Basics of marine refrigeration from the power source through the entire system. Includes chillers, brine and spray systems, sharp freezing and the maintenance and repair of equipment.

3.537
Skin and Scuba Diving-Beginning
(4 Class-Lab Hrs./Wk.) 3 Credits
Introduction to the techniques of skin and scuba diving. Considers the physics, physiology and medical aspects of diving, including vision, acoustics, and properties of gasses. Explores hazards such as nitrogen narcosis, air embolism, decompression sickness, over-exertion and others. Prerequisite: Instructor approval.

3.538
Scuba Diving-Intermediate
(3 Class-Lab Hrs./Wk.) 2 Credits
Additional scuba training for persons who have been inactive or have moved from one diving area to another, and for experienced divers who do not hold recognized certification. Provides needed experience in preparation for advance scuba courses. Specializes in open water diving. Prerequisite: Instructor approval.

3.539
Scuba Diving-Advanced
(4 Class-Lab Hrs./Wk.) 3 Credits
For divers wishing to increase their knowledge of safe diving. Emphasizes student participation and practical application in open water after classroom study. Includes review of basic scuba. Introduces advanced diving activities such as underwater navigation, limited visibility diving, search and recovery, light salvage, and deep decompression diving. Prerequisite: Instructor approval.

3.620
Navigation
(3 Class Hrs./Wk.) 3 Credits
Presents navigation (exclusive of celestial navigation) as the science of conducting a vessel from one position to another. Problems are those of position, direction and distance on the water. Known as piloting, this subject deals with directing the movement of a vessel by reference to landmarks, aids to navigation, or by surroundings.

3.662
General Oceanography I
(3 Class-4 Lab Hrs./Wk.) 4 Credits
Emphasizes meteorological and physical oceanography. Includes the metric system, global weather patterns, history of oceanography, coriolis effect, ocean current systems, geostrophic flow, physical properties of sea water, vertical circulation in the oceans, t-s diagrams, waves and tides. Labs include laboratory and shipboard safety, basic rigging skills and nomenclature, record keeping, operation of meteorology instruments, secci disk, drift bottles, hydrocast routine, and wave tank exercises.

3.664
General Oceanography II
(3 Class-4 Lab Hrs./Wk.) 4 Credits
Emphasizes chemical and biological oceanography. Includes the basic chemistry of sea water, heat capacity, hydrologic cycle, properties of sea water, mixing time, pH concept, carbon dioxide system, geologic history of sea water, origins of life, ocean habitats, biochemical cycles, bacteria, phytoplankton, ocean benthos, and reef communities. Labs include hydrocasts, salinity and temperature profiles, plankton sampling, specimen preservation and labeling, flow meters and volume calculations, plankton splitters, and plankton counting and identification. Prerequisite: 3.662 General Oceanography I.

3.666
General Oceanography III
(3 Class-4 Lab Hrs./Wk.) 4 Credits
Emphasizes estuarine and shoreline processes, marine geology, and the economic resources of the ocean. In-

cludes beach erosion processes, estuary systems, ocean basin geomorphology, structure of the earth, isostasy, earthquakes, marine sedimentation, geologic dating techniques, continental drift and plate tectonic theories, geologic history of Oregon, Pleistocene glaciaton, renewable and nonrenewable resources of the ocean and the economic potential of the ocean. Labs include use and interpretation of fathometer records, chart construction and design, contouring, coring, core processing, sediment interpretation (coarse fraction analysis and microfossil work), mineral and fossil identification and geologic interpretation of sediments. Prerequisite: 3.662, 3.664 General Oceanography I, II.

3.668
Commercial Fishing Seminar
(3 Class Hrs./Wk.) 3 Credits
Study of temperatures, currents, salinity, and food sources in relation to fish migration and habits. Review of current laws and regulations regarding the commercial fishing industries. Includes seminars on salmon, tuna and bottom fish identification and life cycles.

3.800
Diesel Engines I
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Development, design, construction, and operating principles of marine engines. Fuel, lubrication, cooling and air systems, and their relationship to the proper operation and maintenance of diesel engines. Prerequisite: Instructor approval.

3.802
Diesel Engines II
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Advanced knowledge of auxiliary machinery and systems employed in modern marine diesel boats, experience in engine analysis, maintenance, and prevention of casualties by utilizing data obtained during engine operation. Prerequisite: 3.800 Diesel Engines I.

4.101
Drafting I
(4 Lab Hrs./Wk.) 2 Credits
Fundamental pencil drafting course providing the beginning student with a basic understanding of drawing techniques and some knowledge of the role of drafting as a major method of technical communication. Emphasizes the use of drafting instruments, standard orthographic projection, layout procedures, and industry-approved lettering and dimensioning techniques. Geometric construction, selection of appropriate views, sections and auxiliary views, and standard dimensioning practices are discussed.

4.102
Introduction to Specifications
(3 Class Hrs./Wk.) 3 Credits
Techniques for communicating the ideas of the designer to the craftsmen who construct buildings. Preparation of documents supporting the legal contracts for construction projects.

4.103
Introduction to Electronics Drafting
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Introduces graphic communication techniques used in the electronics and electrical industry. Symbols, schematics, block diagrams, chassis layouts, and component outline drawings are practiced and discussed.

4.110
Construction Standards and Building Inspection
(2 Class Hrs./Wk.) 2 Credits
Regulations and practices covered in local, state and federal construction standards. Prerequisite: Instructor approval.

4.111
Statics and Strength of Materials
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Introduction to the strength of materials method of determining the internal stresses and deflections of load-carrying members. Laboratory classes enable students to work problems designed to develop immediate reinforcement of the lecture.

4.112
Photo Interpretation and Mapping
(2 Class-4 Lab Hrs./Wk.) 4 Credits
Principles of aerial photogrammetry. Proper use and application of vertical aerial photographs, including photograph nomenclature, scale, distance and direction, measurement of object heights, timber stand density and volume, interpretation of vegetative types, objects and geologic formations as related to forestry and engineering uses. Stresses practical field applications.

4.117
Drafting II
(6 Lab Hrs./Wk.) 3 Credits
Emphasizes concepts of basic pictorial presentation and dimensioning for shop and production. Stresses accuracy of layout, representation of assemblies and subassemblies, and legible lettering. Prerequisite: 4.101 Drafting I or instructor approval.

4.119
Drafting III
(6 Class-Lab Hrs./Wk.) 3 Credits
Introduces representation of complex joints, threads, fasteners, and welding techniques. Manufacturing materials, product design and development are discussed. Preparation of production drawings to develop professional drafting skills for industrial use. Prerequisite: 4.117 Drafting II or instructor approval.

4.121
Drafting IV
(6 Lab Hrs./Wk.) 3 Credits
Graphic reproduction processes, cams, gears, intersections and developments. Introduces free-hand sketching, and emphasizes industrial drafting room practices. Prerequisite: 4.119 Drafting III and 4.202 Practical Mathematics.

4.124
Drafting V (Architectural Drawing)
(6 Lab Hrs./Wk.) 3 Credits
Emphasizes architectural design techniques. Covers floor plans, working designs, and presentation drawings. Working sets of drawings for a residential frame structure are produced. Prerequisite: 4.101 Drafting I or instructor approval.

4.127
Drafting VI
(6 Lab Hrs./Wk.) 3 Credits
Advanced course utilizing the skills and knowledge from other drafting courses. Technical illustrations in drawing graphic representations from blueprints, photos and sketches. Emphasizes isometric drawing. Covers pictorial representation, casting shadows, shading techniques, ink shading and delineation. Technical illustration techniques as used in handbooks, manuals, IPB's and technical publications are discussed and demonstrated. Prerequisite: Instructor approval.

4.128
Drafting VII
(2 Lab Hrs./Wk./Credit) 1-3 Credits
Extra work in a professional drafting area selected by the student. Instructor assigns projects and drawings to provide additional experience and instruction in the area selected. Completion of a final major project to professional standards in lieu of a final exam. Prerequisite: 4.127 Drafting VI or instructor approval.

4.129
Road and Highway Design
(2 Class-4 Lab Hrs./Wk.) 4 Credits
Advanced course in surveying including: P-line layout, X-sectioning, L-line selection, curve layout and computations, plan and profile, mass-haul diagrams, and road building cost computations. Prerequisite: 4.101 Drafting I and 6.105 Plane Surveying III.

4.131
Mapping and Platting
(1 Class-4 Lab Hrs./Wk.) 3 Credits
Principles of map platting, using field survey data. Office procedure, basic earthwork computation, legal description, and subdivision planning. Simulated problems are used for application of principles. Prerequisite: Instructor approval.

4.132
Housing Construction Practices
(6 Class-Lab Hrs./Wk.) 3 Credits
Introduction to the principal aspects of light frame residential construction. Construction functions are discussed in a logical sequence, similar to the usual order in which they are performed. Tools, terminology, symbols and nomenclature are studied. Building materials, equipment, tools, and methods are discussed and new construction techniques, equip-

ment and materials are incorporated as they come into common use. Provides valuable information for architectural draftsmen, journeymen carpenters, residential construction craftsmen, construction contractors, do-it-yourself home builders, home purchasers, and real estate salesmen.

4.133
Industrial and Marine Construction Practices
(6 Lab Hrs./Wk.) 3 Credits
The materials and methods of industrial construction. Discussion of modern construction techniques applied to commercial and industrial structures on land and in the water. Basic methods of in-place construction of wharves, revetments, cofferdams, causeways, earth dams, dikes, piling and bearing structures, monolithic concrete construction, and steel skeleton structures.

4.134
Cost Estimating
(1 Class-2 Lab Hrs./Wk.) 2 Credits
Cost estimating philosophy, concepts, methods and practices. Covers the subjects that contribute to the successful economic attainment of the engineer's design. Includes procedures for dividing work to be done into measurable units and evaluating engineering design and economics, cost estimating methods, design estimating and management. Design optimization and estimating management are discussed. Prerequisite: Instructor approval.

4.150
Beginning Welding Practices
(2 Class-Lab Hrs./Wk./Credit) 1-9 Credits
A flexible, variable credit course designed to meet the needs of a wide variety of student goals. The point of entry into the curriculum depends on the student's previous experience with the discipline. The course is divided into small segments called performance objectives, each of which has a credit value. Credits earned per term depend upon the number of new skills mastered. Prerequisite: Instructor approval.

4.160
Intermediate Welding Practices
(2 Class-Lab Hrs./Wk./Credit)
1-12 Credits
For the second year industrial mechanics student who is considering welding as an occupation. Skills are developed in the most commonly used welding processes such as shielded metal arc and gas welding in all positions, brazing, cast iron repair, air arc cutting, pipe joint layout and welding, gas tungsten arc welding, and gas metal arc welding. Basic welding metallurgy, and weld testing methods are included. Credits earned on a performance basis. Indivualized instruction packages are utilized. Each objective has a prerequisite and skills must be developed to industrial standards. Prerequisite: 4.150 Beginning Welding Practices or instructor approval.

4.165, 4.166
Marine Welding I, II
(2 Class-Lab Hrs./Wk./Credit)
1-3 Credits Each
A flexible variable credit course designed to meet the needs of a wide variety of student goals. The point of entry into the curriculum depends on the student's previous experience with the discipline. The course is divided into small segments called performance objectives, each of which has a credit value. Credits earned per term depend upon the number of new skills mastered. Prerequisite: Instructor approval.

4.168, 4.169
Agriculture Welding and Advanced Agricultural Welding
(2 Class-Lab Hrs./Wk./Credit)
1-3 Credits Each
A flexible, variable credit course designed to meet the needs of a wide variety of student goals. The point of entry into the curriculum depends on the student's previous experience with the discipline. The course is divided into small segments called performance objectives, each of which has a credit value. Credits earned per term depend upon the number of new skills mastered. Prerequisite: Instructor approval.

4.170
Advanced Welding Practices
(2 Class-Lab Hrs./Wk./Credit) 1-15 Credits
Offers opportunities to develop welding skills to job entry level. Welding design and fabrication methods, joint design and plasma welding techniques are practiced. Specialization in one or more of the basic welding processes and practical application on projects is encouraged. Prerequisite: 4.160 Intermediate Welding Practices or instructor approval.

4.180
Pipe Welding
(2 Class-Lab Hrs./Wk./Credit) 1-6 Credits
Familiarization with the various forms of pipe welding. Offers opportunities to develop pipe welding skills to job entry level. Emphasizes welding and fabrication methods, joint design and preparation. Preparation for welder certification tests. Credits are earned on a performance-time basis, utilizing indivualized instructional packages. Each objective has a prerequisite and skills must be developed to industrial standards. Prerequisite: 4.160 Intermediate Welding Practices or instructor approval.

4.200
Practical Mathematics
(3 Class Hrs./Wk.) 3 Credits
Basic mathematics including fractions, decimals, percents, ratios and proportions, measurements, graphs, formulas and roots, with application to individual areas of interest. Lecture and individualized instruction.

4.202
Practical Mathematics
(3 Class Hrs./Wk.) 3 Credits
Fundamentals of applied algebra with some geometry. Arithmetic with simple algebraic expressions, numerical evaluation, first degree equations, products of binomials, factoring. With application to individual areas of interest. Lecture and individualized instruction. Prerequisite: 4.200 Practical Mathematics or instructor approval.

4.204
Practical Mathematics
(3 Class Hrs./Wk.) 3 Credits
Mathematical tools for problem solving, including right triangle trigonometry, applied plane and solid geometry, measurements, and hand calculator techniques. Topic selection may be suited to individual's needs. Lecture and individualized instruction. Prerequisite: 4.202 Practical Mathematics or instructor approval.

4.240, 4.242
Applied Basic Algebra I, II
(3 Class-1 Lab Hr./Wk.) 3 Credits Each
Designed for students who need algebra for their course of study, but have not had high school algebra. Two term sequence covers the material of a high school elementary algebra course plus applications. One third of course time is devoted to lab work.

4.280
Cooperative Work Experience
(Industrial Mechanics) 1-11 Credits/Term
(24 Credits Maximum)
For the student who desires practical work experience in industry as part of his or her training. Student must work in an approved business and under the supervision of the employer and the College coordinator. A one credit Job Search Techniques class is required during the first on-campus term a student is registered for work experience.

4.281, 4.282, 4.283
Job Search Techniques Seminars
(1 Class Hr./Wk.) 1 Credit Each
(3 Credits Maximum)
See page 30 for course description.

5.204
Defensive Tactics I
(2 Lab Hrs./Wk.) 1 Credit
Studies combat and crowd control problems of the law enforcement officer. Involves the basic principles necessary for self defense or attack as may be found in law enforcement. Prerequisite: Instructor approval.

5.206
Defensive Tactics II
(2 Lab Hrs./Wk.) 1 Credit
Continuation of 5.204 Defensive Tactics I. Prerequisite: Instructor approval.

5.210
Traffic Control
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Traffic law enforcement, regulation and control, fundamentals of traffic accident

investigation. Oregon Motor Vehicle Code. Prerequisite: Restricted to criminal justice majors with instructor approval.

5.211
Standard First Aid with Cardiopulmonary Resuscitation
(3 Class Hrs./Wk.) 2 Credits
Basic first aid for home and work. Presents essential information for the development of first aid skills and judgement. Includes principles and practices of basic life-support and cardiopulmonary resucitation.

5.213
Advanced First Aid
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Development of skill in initial emergency first aid to sustain life and to maintain life support until the victim of an accident or sudden illness is cared for by qualified medical personnel. Self-help and home care when medical assistance is not available or is delayed.

5.217
Criminal Investigation II
(3 Class Hrs./Wk.) 3 Credits
Application of investigative principles to specific types of crime; crime scene to courtroom emphasizing techniques and cases. Prerequisite: CJ 210 Introduction to Criminal Investigation. Restricted to criminal justice majors with instructor approval.

5.218
Personal Identification Techniques
(3 Class-2 Lab Hrs./Wk.) 4 Credits
Identification methodology, history of identification, fingerprinting, eye witness identification, portrait parle, voice prints, and other identification. Prerequisite: Restricted to criminal justice majors with instructor approval.

5.220
Patrol Procedures I
(3 Class Hrs./Wk.) 3 Credits
Purposes of patrols, perception and observation, protection, prevention, suppression, identification and apprehension, types of patrols, purposes, hazards, assignments, responses to emergencies: action to be taken, officer's approach on foot, in an auto, home, building, or room: operation of motor vehicles. Prerequisite: Instructor approval.

5.221
Patrol Procedures II
(3 Class Hrs./Wk.) 3 Credits
Continuation of 5.220 Patrol Procedures I. Emphasizes the proper patrol responses to various calls for service. Prerequisite: Instructor approval.

5.222
Patrol Administration
(3 Class Hrs./Wk.) 3 Credits
Organization, administration, and function of the police line operations as viewed by the police administrator. Special study of current concepts and methods of patrol and the police administrator. Prerequisite: 5.220, 5.221 Patrol Procedures I, II, CJ 110 Introduction to Law Enforcement and instructor approval.

5.226
Firearms and Chemical Agents
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Introduces combat firearms used in law enforcement, with an emphasis on sidearms. The legal and moral aspects of use, with skill development in the area of combat shooting situations. Use of police chemical agents including the psychology of crowd control and sniper suppression, formulation of policy, chemical agents and the law, first aid and decontamination measures, tactics of deployment, procurement and storage. Prerequisite: Restricted to criminal justice majors with instructor approval.

5.227
Advanced Firearms
(1 Class-1 Lab Hr./Wk.) 1 Credit
To refine police combat shooting skills above entry level, and a continuation of an upgraded program of practical application in the use of the .38 caliber revolver and a 12-gauge shotgun; legal issues involved in the use of ammunition and weapons in law enforcement, shooting decisions and alternative measures to firearms. Prerequisite 5.226 Firearms and Chemical Agents and instructor approval.

5.232
Jail Procedures
(2 Class-1 Lab Hr./Wk.) 2 Credits
Receiving, booking, and searching of prisoners and their care and custody, the laws relative to commitments, holding orders and warrants, duties and responsibilities of the officer as outlined in the law regarding property and belongings of prisoners. Detention of prisoners for outside agencies. Prerequisite: Instructor approval.

5.239
Record Systems
(3 Class Hrs./Wk.) 3 Credits
Surveys modern record systems and their application to the criminal justice system. The interrelationship and effective use of records in police management. Prerequisite: 5.240 Police Report Writing or instructor approval.

5.240
Police Report Writing
(3 Class Hrs./Wk.) 3 Credits
Introduction to written communications in the criminal justice administration professions. Analysis and writing in simulated situations. Prerequisite: Instructor approval.

5.241
Crime Scene Procedures
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Application of crime scene procedures in simulated exercises: note-taking, sketching, evidence collection, latent prints, casting and molding, with emphasis on crime scene photography. Prerequisite: CJ 210 Introduction to Criminal Investigation or instructor approval.

5.242
Criminalistics II
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Continuation of CJ 140 Introduction to Criminalistics.

5.244
Police Organization
(3 Class Hrs./Wk.) 3 Credits
Surveys organizations and their function in our society with special emphasis on organizational concepts designed to improve the administration of the various criminal justice agencies. Prerequisite: Instructor approval.

5.246
Management Techniques
(3 Class Hrs./Wk.) 3 Credits
History of police administration, principles of administration in law enforcement, identification of management techniques; operations and activities of various divisions, bureaus, or details; current problems of management in criminal justice. Prerequisite: Instructor approval.

5.280
Cooperative Work Experience
(Criminal Justice) 1-11 Credits/Term (24 Credits Maximum)
Work experience provides the student with on-the-job experiences in his or her career area. Credit value is based upon the work station selected, its relationship to the student's career choice, the amount of time engaged in work, and the program plan. A one credit Job Search Techniques class is required during the first on-campus term a student is registered for work experience.

5.281, 5.282, 5.283
Job Search Techniques Seminars
(1 Class Hrs./Wk.) 1 Credit Each (3 Credits Maximum)
See page 30 for course description.

6.101
Plane Surveying I
(3 Class-4 Lab Hrs./Wk.) 4 Credits
Techniques of chaining and leveling, care and adjustments of surveying instruments, and office procedures. Appropriate field work for practical application of techniques.

6.103
Plane Surveying II
(1 Class-7 Lab Hrs./Wk.) 4 Credits
Continuation of 6.101 Plane Surveying I, in which methods are used to prepare the student in the use of surveying instruments and measurements on extended traverses. Prerequisite: 6.101 Plane Surveying I or instructor approval.

6.105
Plane Surveying III
(1 Class-7 Lab Hrs./Wk.) 4 Credits
Continuation of 6.103 Plane Surveying II. Practical application of techniques through appropriate field work. Instruments are used to lay out and do

traversing of more extensive and complex field problems. Solar observations are made to determine basis of bearings. E.D.M. equipment is used to measure long lines. Plane table and stadia are used for topographic work. Prerequisite: 6.103 Plane Surveying II or instructor approval.

6.108
Evidence and Procedures for Boundary Location
(2 Class-4 Lab Hrs./Wk.) 4 Credits
Emphasizes legal responsibilities of the land survey as they apply to boundaries, subdivision, government surveys, meander lines, tracking, identifying and locating tracts, corners, lines, restoration of obliterated corners, reading instruments of conveyance, adverse possession and eminent domain, riparian rights, dedications, and bodies of water as boundaries.

6.137
Computation Methods I
(Scientific Pocket Calculators)
(1 Class Hr./Wk.) 1 Credit
The use of hand-held scientific calculators, emphasizing applications of practical mathematics. Includes general information about significant digits, round-off, memory storage, arithmetic operations, scientific notation. right angle trigonometry, Law of Sines, and Law of Cosines. NOTE: Each student must have a scientific electronic calculator by the second week of class.

6.150
Introduction to D.C. Circuit Analysis
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Introduces electronics on the basis of direct current; emphasizes contemorary techniques. Covers principles of electronics, physics, unidirectional current and factors affecting its magnitude. Series circuit analysis, parallel circuit analysis, complex unidirectional current circuit analysis and electrical measuring instruments. Prerequisite: Instructor approval.

6.155
Introduction to A.C. Circuit Analysis
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Continuation of electronic theory emphasizing alternating current. Stresses contemporary techniques. Covers an analysis of the sine wave, series circuits with a sine input voltage, series resonance, parallel resonance and filter circuits. Prerequisite: 6.150 Introduction to D.C. Circuit Analysis or instructor approval.

6.160
Introduction to Solid State
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Introduction to transistor and vacuum tube amplification principles, classes of amplifiers, solid state devices including diodes, transistors, biasing transistor amplifier stages. Investigation of field-effect transistors, integrated circuits and operational amplifiers. Lab experiments supplement class lecture. Prerequisite: 6.155 Introduction to A.C. Circuit Analysis or instructor approval.

6.170
Electronic Bench Techniques I
(2 Class-4 Lab Hrs./Wk.) 4 Credits
Emphasizes soldering and desoldering techniques in conjunction with the use of small hand tools. Electronic schematic symbols and schematic reading. Resistor and capacitor color coding with construction of basic circuits from schematics. Troubleshooting, using electronic test equipment. Prerequisite: Concurrent enrollment in 4.200 Practical Mathematics or higher, or instructor approval.

6.171
Electronic Bench Techniques II
(2 Class-4 Lab. Hrs./Wk.) 4 Credits
Electronic bench techniques emphasizing effective selection and use of test instruments. Electronic schematics and schematic analysis including construction of circuits from schematics. Circuit fault location using instruments such as the signal generator oscilloscope, TVM, VTVM and multimeters. Prerequisite: 6.170 Electronic Bench Techniques I.

6.172
Electronic Bench Techniques III
(2 Class-4 Lab Hrs. Wk.) 4 Credits
Semiconductor course investigating the properties of semiconductor diodes, bipolar transistors, field effect transistors and amplifiers with their classes of operation. Amplifiers, power supplies and oscillators are constructed and evaluated using electronic test instruments. Prerequisite: 6.171 Electronics Bench Techniques II.

6.217
Discrete Logic Circuits
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Analysis of non-sinusoidal active discrete circuits including logic gates multivibrators (astabel, monostable, bistable) Schmitt triggers, and ramp generators. Introduction to Boolean algebra and combinational logic. Prerequisite: 6.160 Introduction to Solid State or instructor approval.

6.218
Digital Integrated Circuits
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Analysis of device parameters as they pertain to modern integrated circuits. Analysis of sequential logic IC flip-flops and one shots. Introduction to logic shift registers and counter circuits. Prerequisite: 6.217 Discrete Logic Circuits or instructor approval.

6.219
Digital Computer Electronics
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Machine language, programing, hardware, input/output interfacing and microprocessor operation with malfunction detection. Utilizes individual student microprocessor training devices. Prerequisite: 6.218 Digital Integrated Circuits or instructor approval.

6.252
Advanced FCC License Preparation I
(3 Class Hrs./Wk.) 3 Credits
First part of a two-term sequence preparing electronics students and others for the Federal Communications Commission Second Class Radiotelephone license examination. Covers basic radiotelephone theory and regulations. Prerequisite: Instructor approval.

6.253
Advanced FCC License Preparation II
(3 Class Hrs./Wk.) 3 Credits
Second part of two-term sequence preparing electronics students and others for Element III of the Federal Communications Commission Commercial Radiotelephone license examination. Element III covers basic radiotelephone theory and regulations which are required for a Second-Class license. Prerequisite: 6.252 Advanced FCC License Preparation I or instructor approval.

6.254
Advanced FCC License Preparation III
(3 Class Hrs./Wk.) 3 Credits
For individuals interested in the fields of radio and television broadcast engineering requiring a First-Class Commercial license. Prepares advanced electronics students and others engaged in electronics for Element IV of the FCC Radiotelephone license examination. Prerequisite: Second-Class FCC license or instructor approval.

6.256
Television Equipment Operation
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Fundamentals of television equipment operation, its proper use and limitations. Special emphasis on light designing for television, motion pictures, and the theater. In-depth study of film techniques and how to properly criticize these various art forms.

6.257
Radio Station Operator's Lab
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Radio equipment operation, program planning, and audio recording procedures. Lab work consists, in part, of working as a "disc jockey" at a campus radio station, which broadcasts on closed-circuit to the student center and making audition tapes for actual job interviews.

6.258
Announcing Laboratory
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Practical use and application of knowledge gained in previous radio and television courses. Emphasis on individualized projects which are developed by the students in the areas of radio and television. Stresses documentary script development, scene design for television, film, and theater, and practical use of film and video tape equipment.

6.259
Advanced Radio and Television Equipment Operation
(3 Lab Hrs./Wk./Credit) 1-3 Credits
(9 Credits Maximum)
Advanced course work in the electronics media field. Using the "hands-on workshop" approach, advanced students will be able to more fully develop skills in specific areas of broadcasting such as audio, camera, direction, video tape operation, and script development. Prerequisite: Instructor approval.

6.280
Cooperative Work Experience (Electronics, Drafting and Engineering) 1-11 Credits/Term
(24 Credits Maximum)
Provides the student with on-the-job experience in his or her career area. Credit value is based upon the work station selected, its relationship to the student's career choice, the amount of time engaged in work and the program plan. A one credit Job Search Techniques class is required during the first on-campus term a student is registered for work experience.

6.281, 6.282, 6.283
Job Search Techniques Seminars
(1 Class Hr./Wk.) 1 Credit Each
(3 Credits Maximum)
See page 30 for course description.

6.300
Special Devices and Applications
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Characteristics and applications of SCR's, TRIACS and associated trigger devices; the U.J.T., Zener Diode, optoelectronic devices including LEDS and phototransistors. Prerequisite: 6.160 Introduction to Solid State or instructor approval.

6.301
Solid State Linear Circuits
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Analysis of A.C. amplifiers, small and large signal conditions, bias stability, Beta dependency, frequency response, multistage coupling. Prerequisite: 6.300 Special Devices and Applications or instructor approval.

6.302
Electromagnetic Fields and Waves
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Includes waveguides, transmission lines, TWT, BWO, klystrons and magnetrons. Attenuation and measurement techniques. Prerequisite: 6.301 Solid State Linear Circuits or instructor approval.

6.303, 6.304, 6.305
Advanced Electronics IV, V, VI
(2 Class-Lab Hrs./Wk./Credit)
1-3 Credits Each
Individual advanced work in the fields of electronics. Prerequisite: Instructor approval.

7.280
Cooperative Work Experience (Home Economics-Early Childhood Ed.)
1-11 Credits/Term
(24 Credits Maximum)
For the student who desires practical work experience as part of his or her training. Student must work for an approved agency and under the supervision of the employer and College coordinator. A one credit Job Search Techniques class is required during the first on-campus term a student is registered for work experience.

7.281, 7.282, 7.283
Job Search Techniques Seminars
(1 Class Hr./Wk.) 1 Credit Each
(3 Credits Maximum)
See page 30 for course description.

7.500
Introduction to Early Childhood Education
(3 Class Hrs./Wk.) 3 Credits
Trends in early childhood education, exploration of career opportunities, state and federal regulations, staffing and content of various programs for the young child.

7.502
Children's Music-Children's Literature
(3 Class Hrs./Wk.) 3 Credits
Providing music and movement activities for young children through the experience of music as a pleasurable medium of expression, as well as an overview of available children's literature, the rationale for utilizing such literature, ways to implement its use and ways to evaluate its appropriateness in a classroom situation.

7.504
Child Care and Guidance
(3 Class Hrs./Wk.) 3 Credits
Acquaints students with various aspects of child care and guidance of preschool age children; discipline and self-control, normal and abnormal behavior patterns, and daily routines. Prerequisite: 7.511 Directed Experiences I and FL 225 Child Development or instructor approval.

7.506
The Exceptional Child
(3 Class Hrs./Wk.) 3 Credits
Emphasizes understanding the characteristics of children with exceptional abilities or handicaps, and the design of preschool programs to meet the needs of these children. Prerequisite: FL 225 Child Development.

7.511
Directed Experiences I
(1 Class-12 Lab Hrs./Wk.) 5 Credits
Experience in working with young children at the Josie Peper Child Care Center. Under the supervision of an experienced teacher, students plan and lead small groups of children in a variety of creative activities. Prerequisite: 7.540 Observing and Modifying Behavior and 7.502 Children's Music-Children's Literature or instructor approval. Concurrent enrollment in 7.520 Creative Activities recommended.

7.512
Directed Experiences II
(1 Class-15 Lab Hrs./Wk.) 6 Credits
Supervised teaching of young children at the Josie Peper Child Care Center. Experience in planning, organizing, and supervising daily activities. Prerequisite: 7.511 Directed Experiences I or instructor approval.

7.513
Directed Experiences III
(1 Class-15 Lab Hrs./Wk.) 6 Credits
Continued supervised teaching of young children at the Josie Peper Child Care Center. Emphasizes planning a balanced full-day experience, long-range planning, and the child's cognitive development. Prerequisites: 7.511, 7.512 Directed Experiences I, II, or instructor approval.

7.514
Supervised Field Experience-Early Childhood Education
(2 Class-21 Lab Hrs./Wk.) 9 Credits
Skill and knowledge of early childhood education are tested while working in a cooperative work experience station in the community. Prerequisite: Instructor approval.

7.520
Creative Activities
(3 Class Hrs./Wk.) 3 Credits
Experience with various media and activities that promote creative growth in young children. The value of various activities, how to present activities, as well as direct experience in the use of paint, clay, paste, collage, puppets, and flannelboards. Concurrent enrollment in 7.511 Directed Experiences I recommended.

7.521
Environments for Young Children
(2 Class-3 Lab Hrs./Wk.) 3 Credits
How to evaluate and plan for preschool environments. Includes the effects of room arrangement and environment on children's behavior and learning. Basic methods of creating learning materials for the young child, emphasizing the use of free and inexpensive materials.

7.522
Learning Experiences for Young Children
(3 Class Hrs./Wk.) 3 Credits
Planning a balanced preschool program, field trips, learning units, math and science activities. The student analyzes various teaching methods and philosophies in order to develop a personal philosophy of teaching. Concurrent enrollment in 7.513 Directed Experiences III recommended. Prerequisite: 7.520 Creative Activities or instructor approval.

7.523
Administration of Child Care Centers
(3 Class Hrs./Wk.) 3 Credits
Familiarizes students with the opera-

tions and concerns of a day care center in areas of state and federal regulations. USDA food program. parents and staff, and agencies and organizations that deal with young children.

7.530
Nutrition and Health Needs for the Young Child
(2 Class-3 Lab Hrs. Wk.) 3 Credits
Nutritional needs and food habits of the child with practical application to the day care center. Study of health routines, dental hygiene and childhood diseases.

7.540
Observing and Modifying Behavior
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Techniques for observing, recording, and modifying the behavior of children. Emphasizes practice in observing, recording, and modifying child behavior under various conditions. Includes an introduction to selected developmental progress scales.

7.541
Home-School-Community Relations
(3 Class Hrs./Wk.) 3 Credits
Skills for developing rapport and communication with parents. Conferences, meetings, and community resources as tools for fostering parent-child-teacher relationships. Exploration of the variety of cultural and personal beliefs held by parents and teachers about children.

8.100
General Forestry
(3 Class Hrs./Wk.) 3 Credits
Introduces the major subject areas in forestry. Presents the history of forestry in this country, as well as forestry terminology, concepts, and nomenclature. Tools used by foresters are shown and demonstrated.

8.102
Tree Identification
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Provides the basis for knowledge of the botanical and other physical characteristics of trees and shrubs. Enables the forestry aide or technician to specifically identify the forest trees and woody shrubs of the region, both by common and scientific names.

8.104
Silvicultural Practices I
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Silvicultural practices used in Western Oregon and Washington, including the various reforestation options - bare root and plug seedling planting, stocking surveys and computation of results. Tree growth patterns are studied, and site measurements are made and compared to site index tables. The effects of precommercial thinnings are observed and field applications are made on select plots. Safe use of tools is emphasized throughout the class.

8.106
Silvicultural Practices II
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Discussion and observation of nursery practices and tree breeding, including genetic improvements, seed orchards, care and maintenance. The classical silvicultural systems; clearcutting, seed tree, shelterwood, selection, coppice, and silviculture of a mixed stand. Methods of obtaining and recording data in the field with application to yield tables. Oregon Forest Practices Act and its impact on the wood growing industry.

8.108
Forest Soils
(2 Class-4 Lab Hrs./Wk.) 4 Credits
Fundamentals of soil management as it relates to forested land. Soils identification, classification, and characteristics are taught. Relationships of soils and hydrology to the Oregon Forest Practices Act and various harvesting/management techniques are emphasized.

8.110
Fire Control
(3 Class Hrs./Wk.) 3 Credits
Fire behavior, weather, effect of topography, fuels, large fires, fire danger ratings, techniques of fire control in common use, tools used, record keeping, communication, organizations for fire fighting and public relations for fire prevention.

8.112
Forest Protection
(3 Class Hrs./Wk.) 3 Credits
Agents other than fire which damage the forest. Includes damage from the forces of nature, forest disease, forest insects, and animal problems. Specific identification of many of the organisms causing damage to the forest.

8.114
Forestry Hand Tools and Safety
(1 Class-4 Lab Hrs./Wk.) 3 Credits
Operation and safe use of power equipment such as chain saws, brush cutters, power sprayers, pumper trucks, and fire pumps. Sharpening and use of hand tools such as axes, brush hooks, and machetes.

8.120
Forest Operations
(1 Class-4 Lab Hrs./Wk.) 3 Credits
Principles and economics of timber management. Methods and management decisions utilized by the forest industries. Field trips include observation of felling, bucking, yarding, loading, hauling, dumping, and rafting operations, as well as road building and maintenance of equipment.

8.125
Scaling and Grading
(1 Class-4 Lab Hrs./Wk.) 3 Credits
Applied techniques of measuring logs according to accepted procedures by the agencies engaged in scaling, showing procedures both east and west of the Cascade Range. Includes principles observed in log grading as well as demonstrations by area personnel currently engaged in this type of work. Prerequisite: Instructor approval.

8.127
Wood Products
(1 Class-4 Lab Hrs./Wk.) 3 Credits
Processing the output of the forest. Field trips to plants engaged in the production of plywood, shingles, poles, pulp, paper, lumber and special products.

8.129
Recreational Facilities
(1 Class-4 Lab Hrs./Wk.) 3 Credits
Recreational uses and impact upon the forest land. Elements of campground design and site planning. Practical experience in construction of equipment.

8.135
Cruising Methods I
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Fundamentals of timber cruising, emphasizing mathematical concepts. Methods of obtaining tree diameters, tree heights and form class are developed through classroom and field exercises. Covers volume determination using various tables and data gathered in the field or from classroom simulation. Discusses theory and application of sampling procedures including design, intensity and statistical evaluation, random and mechanical sampling techniques, and application of statistical analysis to the sampling method.

8.136
Cruising Methods II
(1 Class-4 Lab Hrs./Wk.) 3 Credits
Methods of measuring volume of standing timber. Emphasizes techniques of measuring tree diameters, form class and tree heights, as well as recording field data for use in volume determination. Cruises of various intensity from 20% to a 100% sample are made. Covers strip, fixed plot and variable plot techniques. Both primary and secondary control are included using staff and hand held compasses. Prerequisite: 8.135 Cruising Methods I.

8.200
Milking and Milk Machines
(3 Class Hrs./Wk.) 3 Credits
Study of milk synthesis, anatomy of the mammary glands, and the milk let-down process. Presents proper milking techniques along with a comparison of different types of machines.

8.201
Milking and Milk Machines Laboratory
(4 Lab Hrs./Wk.) 1 Credit
Milking techniques, sanitation, herdsmanship and procedural consistency are practiced as the student gains actual milking experience on the College farm.

8.206
Farm Mechanics
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Examines the major field machines and equipment used in connection with the farm enterprises in relationship to their maintenance, adjustment and minor repair requirements.

8.208
Soils
(2 Class-2 Lab Hrs./Wk.) 3 Credits
Soil composition and its relationship to soil fertility. The need for and practices involved in soil testing, and utilization of fertilizers to maximize crop production on an economical basis.

8.212
Animal Anatomy and Physiology
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Various anatomical and physiological systems of farm animals. General training in such skills as administering shots and performing minor surgical procedures including castration, docking, dehorning and other day-to-day operations necessary to animal management.

8.213
Feeds and Feeding
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Various nutrients for the economical and nutritional well-being of farm animals. Practice in construction of adequately balanced, least-cost rations.

8.214
Diseases and Parasites of Domestic Animals
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Diseases most frequently encountered on the farm and ways to prevent and treat them. Parasites, a major economic loss to livestock ranchers, are studied, including ways of controlling and preventing their harmful effects.

8.216
Artificial Insemination
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Techniques of insemination of cattle. Includes history, reproductive organs, semen evaluation, factors influencing the quality and quantity of semen, diseases and artificial insemination. Prerequisite: Instructor approval.

8.222
Introduction to Agriculture Economics
(3 Class Hrs./Wk.) 3 Credits
Various elements of agricultural production as affected by the economic situation. Supply and demand effects on agricultural production and marketing. Economic problems facing the modern farmer.

8.224
Farm Business Management
(3 Class-2 Lab Hrs./Wk.) 4 Credits
Selection, formulation and practical use of farm and livestock records for achieving maximum potential in farm business, as well as an examination of the farm as a business enterprise. Emphasizes the characteristics and responsibilities of the modern farm manager.

8.225
Dairy Management
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Care of the dairy animal through life. Emphasizes herd health. Examines record keeping and management decisions.

8.226
Forage Production and Utilization
(2 Class-3 Lab Hrs./Wk.) 3 Credits
Production, harvest, storage and use of farm-grown feedstuffs, including actual harvest experience on the College farm.

8.227
Livestock Management
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Management of livestock enterprises in the beef cattle, swine and sheep industries. Students manage a livestock operation on paper, including all details from buying or renting a farm, to the actual selling of its products.

8.235
Farm Construction and Design I
(1 Class-3 Lab Hrs./Wk.) 2 Credits
Design and construction of farm buildings and structures. Planning new facilities and renovating the old. Practical experience in various areas of construction. Emphasizes farmstead planning, building materials and building cost estimation.

8.236
Farm Construction and Design II
(1 Class-3 Lab Hrs./Wk.) 2 Credits
Design and construction of farm buildings and structures. Planning new facilities and renovating the old. Practical experience in various areas of construction. Emphasizes fence construction, plumbing, wiring, and construction of machine sheds and farm shops.

8.237
Farm Construction and Design III
(1 Class-3 Lab Hrs./Wk.) 2 Credits
Design and construction of farm buildings and structures. Planning new facilities and renovating old. Practical experience in various areas of construction. Emphasizes moisture, temperature and ventilation considerations; building and roof frames; and housing for specific enterprises, such as dairy, swine, and other livestock.

8.240
Crop Production
(2 Class-4 Lab Hrs./Wk.) 3 Credits
General field crop production and harvesting including seeding, establishment, tillage, rotations, production hazards, improvement and quality of cereal grains, forage and other field crops.

8.244
Livestock Judging
(2 Class-4 Lab Hrs./Wk.) 3 Credits
Selection of swine, sheep, beef and dairy cattle on the basis of conformation in relationship to the marketability and productivity of the animals. Actual judging experience in various contests.

8.245
Dairy Judging
(2 Class-4 Lab Hrs./Wk.) 3 Credits
Selection of dairy cattle on the basis of conformation and production records as related to marketability and productivity. Students learn to organize and score contests as conducted in collegiate, FFA, and 4-H judging contests.

8.246
Introduction to Animal Science
(3 Class Hrs./Wk.) 3 Credits
Extent and importance of the livestock industry and its place in the U.S. agriculture industry. History, species, breeds, nutrition, genetics, physiology, breeding, and management.

8.250
Fundamentals of Meats and Meatcutting
(2 Class-4 Lab Hrs./Wk.) 3 Credits
Fundamentals of slaughtering and cutting carcasses. Identification of meat cuts and evaluation of quality differences. The economics of the meat industry from the ranch to the retail outlets.

8.260
Special Projects in Livestock Technology
(2 Hrs./Wk./Credit) 1-4 Credits
Develops the student's ability to select beef, sheep and swine on the basis of economics, as it relates to the marketability and productivity of these animals. Alternatively, students may select a special area of study within the livestock field. Normally taught on an individual reading and conference basis. Student and instructor will contract for specific credit hours. Credits earned depend on type of individual project. Prerequisite: Instructor approval.

8.270
Special Projects in Dairy Technology
(2 Hrs./Wk./Credit) 1-4 Credits
Student selects a special area of study within the dairy field. Normally taught on an individual reading and conference basis. Student and instructor contract for the credit hours. Credits earned depend on type of individual project. Prerequisite: Instructor approval.

8.280
Cooperative Work Experience (Agriculture and Forestry)
1-11 Credits/Term (24 Credits Maximum)
Work experience provides the student with on-the-job experience in his or her career area. Credit value is based upon the work station selected, its relationship to the student's career choice, the amount of time engaged in work, and the program plan. A one credit Job Search Techniques class is required during the first on-campus term a student is registered for work experience.

8.281, 8.282, 8.283
Job Search Techniques Seminars
(1 Class Hr./Wk.) 1 Credit Each (3 Credits Maximum)
See page 30 for course description.

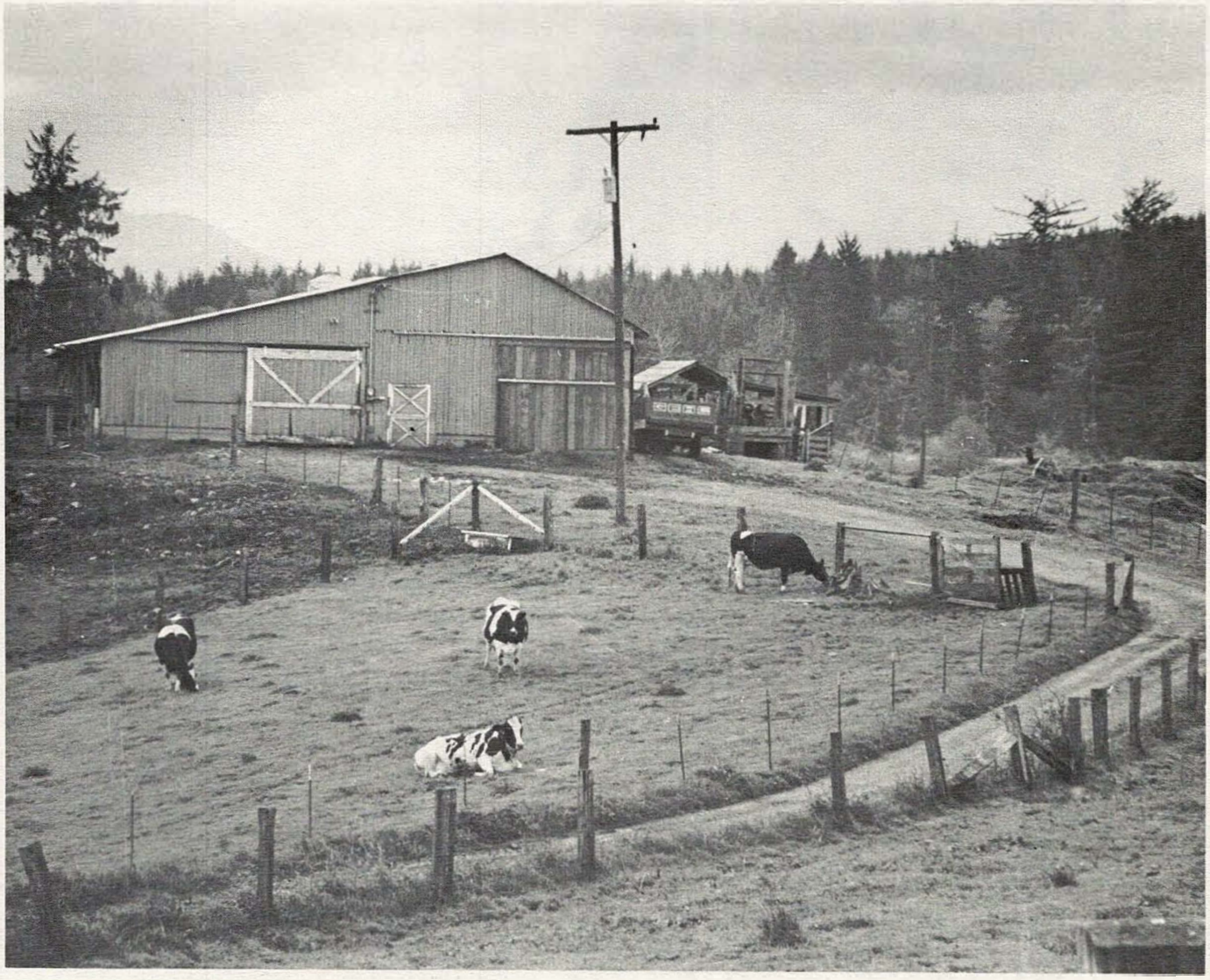
8.330
Dairy Cattle Production
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Fundamental aspects of the dairy industry and the most effective techniques of feeding and management of dairy cattle. Factors influencing dairy herd production.

8.332
Beef Cattle Production
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Fundamental aspects of the beef industry and the most practical, efficient and effective techniques for feeding and management of beef cattle. Factors pertaining to and influencing beef herd production.

8.334
Swine Production
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Fundamental aspects of the swine industry, and the most practical effective techniques of feeding and management of swine. Factors contributing to and influencing swine production in the Northwest

8.336
Sheep Production
(3 Class-3 Lab Hrs./Wk.) 4 Credits
Fundamental aspects of the sheep industry. Practice in techniques of feeding and management for higher production as influenced by the Pacific Northwest climate and economy.

8.338
Introduction to Small Farm Animal Production
(1 Class-2 Lab Hrs./Wk.) 2 Credits
Introduces the student to the small animal industries. Practical aspects of poultry, rabbit and other small animal management. Emphasis is directed toward breeds, breeding, feeding, disease control, housing and equipment.



Adult & Community Education

Developmental Programs, Apprenticeship, Community Information

The College considers education to be a lifelong process and thus provides curricula directed to the interests and needs of the communities served. Classes offer a contribution to the improvement of family and civic life and of the social and cultural atmosphere of community, state, and nation. Any adult, regardless of age, previous schooling or experience, may enroll in Clatsop Community College.

The evening school program is an integral part of the total educational program, with simple admission and registration procedures. Evening students wishing to become full-time, degree-seeking students must complete the normal admission procedures.

A broad program of courses is offered each term for professional, cultural, and special interest groups, business and industry, and persons who are associate degree-oriented.

Typical courses taught under the auspices of the Adult and Community Education Division include developmental skills, art, foreign language, home economics, home and auto maintenance, music and photography, real estate, securities and investments, and emergency medical services.

Any group of ten or more persons with a common educational or training interest may request the College to establish and offer such a course or course series. The College will employ an instructor if one is available and set up the course. Tuition and fees will be assessed in accordance with the overall cost of the instruction, materials, and laboratory expense.

DEVELOPMENTAL PROGRAMS

For adults who need basic skills improvement. Includes programs in Adult Basic Education, English as a Second Language, American Citizenship, Adult High School completion, G.E.D. Preparation and developmental classes for students in the College's transfer and vocational programs.

ADULT BASIC EDUCATION

Adults with less than an eighth grade education may receive basic skills instruction in reading, spelling, writing and arithmetic. Classes are individualized, self-paced, and may be entered at any time during the term. Classes are offered during the day and evening. Tuition is free. Credit earned in these courses does not apply toward an associate degree at Clatsop Community College.

Following are descriptions of the four fundamental courses offered in this program.

0.745
ABE-Corrective English
2 Class Hrs./Wk./Credit for 10 Wks. **1-3 Credits**
Basic grammar and writing skills in an individualized setting, emphasizing the skills used in and required for everyday life. For adults with less than an eighth grade education and lacking skills in grammar and composition. Meets individual needs in basic writing skills.

0.745
ABE-Spelling Improvement
2 Class Hrs./Wk./Credit for 10 Wks. **1-3 Credits**
For adults with less than an eighth grade education and lacking skills in spelling. Provides techniques for spelling improvement in an individualized setting.

0.745
ABE-Reading
2 Class Hrs./Wk./Credit for 10 Wks. **1-3 Credits**
Individualized instruction at all levels of reading, emphasizing materials used in everyday life. For adults with less than an eighth grade education and lacking skills in reading, and for those who have difficulty in reading.

0.745
ABE-Mathematics
2 Class Hrs./Wk./Credit for 10 Wks. **1-3 Credits**
Individualized instruction in basic arithmetic. Emphasizes the skills needed and required for everyday life. For adults with less than an eighth grade education, and lacking skills in mathematics.

GENERAL EDUCATIONAL DEVELOPMENT (G.E.D.)

Available to adults 18 or over, the G.E.D. program helps students prepare for an equivalency certificate by successfully passing a standardized examination. A waiver is required before an individual less than 18 years old may attempt the test. Arrangements for taking the test may be made by contacting the Adult and Community Education Office. Free practice tests are also available for students who are unsure of their knowledge and/or skills. G.E.D. preparation classes are offered both day and evening. Credit earned in this course does not apply toward an associate degree at Clatsop Community College. In some instances, tuition may be paid by a federal grant.

0746
G.E.D. Preparation
2 Class Hrs./Wk./Credit for 10 Wks. **1-3 Credits**
Review of basic skills in five general knowledge areas: social studies, language, reading, science and math. Individualized for each student, emphasizing his or her particular areas which need improvement.

ENGLISH AS A SECOND LANGUAGE

Classes stress conversational and pronunciation skills for adults whose native language is not English. Classes are also offered in United States citizenship for foreign students preparing to become United States citizens. Credit earned in

these courses does not apply toward an associate degree at Clatsop Community College. Classes are offered primarily in the evening. Tuition is free.

0.747
English as a Second Language
2 Class Hrs./Wk./Credit for 10 Wks. **1-3 Credits**
Fundamentals of the English language as it is spoken, along with basic skills in reading and writing.

0.748
Preparation for American Citizenship
1 1/2 Class Hrs./Wk./Credit for 10 Wks. **1-2 Credits**
Traces the history and development of our nation and government. Emphasizes how our government functions and how citizens may control government by being informed voters.

ADULT HIGH SCHOOL DIPLOMA

Authorized by the State Board of Education, this diploma carries the same legal merit as a public school diploma. Requirements are met through units of credit and competencies. Credits and competencies may be earned through adult high school classes, community college courses, or through evaluation of knowledge gained outside of a regular school setting.

Each student will undergo assessment of basic skills before entry into the program. Students with a pre-high school level are placed in adult basic education (ABE) classes until skills are at a level to insure success in the adult high school program. After assessment, an individual plan is developed to meet requirements for granting the Clatsop Community College Adult High School Diploma.

Students under the age of 18 need special clearance from their local high school to enroll in the adult high school program. In some instances, tuition may be paid by a federal grant.

Credit earned in these courses does not apply toward an associate degree at Clatsop Community College.

0.750.2
AHS-Life Experience Assessment
3 Class Hrs./Wk.for 11 Wks.
Provides individual students the opportunity to document their actual life experiences which, upon assessment, may be applied toward credit and competency requirements. Prerequisite: Admission into adult high school program.

0.750.4
AHS-Orientation
3 Class Hrs./Wk. for 11 Wks.
Introduces the student to the community college setting. Exposes students to the various services offered by the College and the community. Additionally provides a series of lectures, films and guest speakers aimed at helping the student adjust socially to the College high school program. Prerequisite: Admission into the adult high school program.

0.751
AHS-U.S. History
3 Class Hrs./Wk. for 22 Wks.
The historical background of the United States. The first 33 class hours cover colonial history, the Constitution, and events through the Civil War. The second 33 class hours cover 1880 through present, emphasizing trends in history. How the United States has become what it is today, both physically and politically. Prerequisite: Approximately eighth grade reading level and admission into adult high school program.

0.752.1
AHS-English Composition I
3 Class Hrs./Wk. for 11 Wks.
Introduces and develops the skills of paragraph development. Students seek to improve their writing through work on individually identified writing skill needs. Prerequisite: Admission into adult high school program.

0.752.3
AHS-English Composition II
3 Class Hrs./Wk. for 11 Wks.
Introduces and develops the skills of multiparagraph essay writing. The student learns to apply analytical skills in response to non-fiction work. Prerequisite: 0.752.1 AHS-English Composition I or instructor approval, and admission into adult high school program.

0.756.1
AHS-Global Studies
3 Class Hrs./Wk. for 11 Wks.
Focuses on the relationships between peoples and cultures. Prerequisite: Approximately eighth grade reading level and admission into adult high school program.

0.759.1
AHS-Health (Family Life)
3 Class Hrs./Wk. for 11 Wks.
Provides students with knowledge of good mental and physical health and how these affect daily living. Discusses a variety of conflict situations arising from family living, and offers alternative solutions. Prerequisite: Admission into adult high school program.

0.760
AHS-Mathematics
3 Class Hrs./Wk. for 11 Wks.
Provides students with the arithmetic and algebraic skills necessary for solving everyday life problems. Deals with a variety of math problems encountered at home and on the job. Prerequisite: Proficiency in whole number manipulations and admission into adult high school program.

0.760.1
AHS-Personal Finance and Economics
3 Class Hrs./Wk. for 11 Wks.
Provides students with basic economic, business, and legal knowledge to enable them to function wisely as consumers. Includes basic information on personal finance. Prerequisite: Approximate eighth grade reading level and admission into adult high school program.

0.761
AHS-Literature
3 Class Hrs./Wk. for 11 Wks.
Students read and learn to respond critically to the four major forms of literature: The novel, short stories, poetry, and drama. Prerequisite: 0.752.3 AHS-English Composition II and admission into adult high school program.

0.762
AHS-Government
3 Class Hrs./Wk. for 11 Wks.
Affords an understanding of federal, state, and local governments, agencies and services, and citizenship rights and responsibilities. Prerequisite: Admission into adult high school program.

0.763
AHS-Career Exploration
3 Class Hrs./Wk. for 11 Wks.
Students explore their interests and talents, study various career clusters, begin to define their career objectives, and develop a degree of employability. Prerequisite: Admission into adult high school program.

0.764
AHS-Science
3 Class Hrs./Wk. for 22 Wks.
An introduction to physical science for those seeking the adult high school diploma. Use of the metric system, determination of error in measurements, mass, volume, density, speed and velocity are covered during the first 33 hours. The second half covers force and motion, and the different forms of energy. Emphasizes basic laboratory experiments and discovery processes during the total 66 class hours. Prerequisite: Must be admitted to adult high school program, and have basic math skills in whole numbers, decimals, fractions, and percents.

DEVELOPMENTAL READING, WRITING AND MATH

Reading, writing and math instruction are offered for students in vocational and transfer programs. These courses are also available for members of the community who wish to upgrade or review their skills in these areas. Classes are offered both day and evening by individualized instruction.

Up to 15 credits of the following courses may be applied as electives towards the Associate in Science or Associate in General Studies degrees.

0.765
Developmental Reading
2 Class Hrs./Wk./Credit for 10 Wks. **1-3 Credits (9 Credits Maximum)**
For students who have difficulty in reading or listening at a speed or level of comprehension necessary for college work. Individualized instruction to improve word attack skills, vocabulary, understanding and interpretation of content. Grading and credit based on effort and improvement. Prerequisite: Instructor approval.

0.766
Spelling Improvement
2 Class Hrs./Wk./Credit for 10 Wks. **1-3 Credits (9 Credits Maximum)**
Provides student with techniques for spelling improvement. Includes phonics, pronunciation, and word affixes. Student may study word list pertinent to his/her own field of interest. Grading and credit based on effort and improvement. Prerequisite: Instructor approval.

0.767
Corrective English
2 Class Hrs./Wk./Credit for 10 Wks. **1-3 Credits (9 Credits Maximum)**
Individualized instruction in basic writing skills. Improves competency in punctuation, capitalization, spelling, grammar, sentence construction, and paragraph writing. Grading and credit based on effort and improvement. The student may challenge by examination, at no additional cost, and have credit transferred to 1.100 Vocational Communications after successful completion of three credits of equivalent coursework in 0.767 Corrective English. Prerequisite: Instructor approval.

0.768
Effective Study Skills
2 Class Hrs./Wk./Credit for 10 Wks. **1-3 Credits (9 Credits Maximum)**
Individualized instruction in the preparation and successful completion of class work as follows: reading textbooks, taking textbook and lecture notes, using reference materials and taking exams. Grading and credit based on effort and improvement. Prerequisite: Instructor approval.

0.770
Developmental Mathematics
2 Class Hrs./Wk./Credit for 10 Wks. **1-3 Credits (9 Credits Maximum)**
Individualized instruction in addition, subtraction, multiplication and division of whole numbers, fractions, and decimals. Percent, interest and commission, discount, measurement, area, volume, formulas, equations, ratio, and proportions. The student may challenge by examination, at no additional cost, and have credit transferred to 4.200 Practical Math after successful completion of three credits of equivalent coursework in 0.770 Developmental Mathematics. Prerequisite: Instructor approval.

APPRENTICESHIP TRAINING

Apprenticeship-related training classes are available to apprentices who are indentured and registered with the Oregon Bureau of Labor, Apprenticeship and Training Division. Journeymen who have completed an apprenticeship program, upon completion of the general education requirements listed on page 29, may receive an Associate in Science degree in Crafts and Industrial Trades.

Persons wishing to become apprentices should apply at the Oregon State Employment Office.

COMMUNITY INFORMATION

SENIOR CITIZENS

Clatsop County residents 62 years of age or older and younger persons retired under a disability pension are invited to become members of Clatsop Community College's Gold Card Club. Membership entitles the senior citizen to waiver of tuition in most courses on a space-available basis. Gold Card holders, however, are responsible for materials and lab fees. Members may also attend student body-sponsored performances and activities such as athletic events, lectures, dramatic presentations, films, etc., free of charge.

To become a member of the Gold Card Club, the individual must fill out an application and present proof of age or retirement under a disability pension to the Adult and Community Education Office.

CLASS SCHEDULES

A schedule of classes which contains a listing of all courses offered on campus and through extension centers is published prior to

the beginning of each term. Additional information can be obtained by contacting 325-0910, ext. 206, or by contacting the coordinator located in the nearest College extension center.

EXTENSION CENTER COORDINATORS

Adult and community education classes are taught at a number of locations in Clatsop County. Specific information about courses offered at off-campus facilities may be obtained from the Adult and Community Education Office, 325-0910, ext. 206.

South Clatsop County:
Seaside, Gearhart, Arch Cape, Cannon Beach
. . . 738-5291 (738-9791 home), Kathleen Paino
Warrenton. . . . . 325-0910, ext. 210, Ron Collman
Westport. . . . . 455-2282, Edward Walters
Knappa . . . . . 458-6166, Dick Jackson
Jewell . . . . . 755-2385, Rosemary Berdine

CLATSOP/LINFIELD BACHELOR DEGREE PROGRAM

In 1980-81 Clatsop Community College and Linfield College initiated a joint degree program. Through this program it is possible to earn a B.A. degree without having to leave Clatsop County. Linfield College is a private liberal arts college located in McMinnville, Oregon; but through its Off-Campus Program, courses are brought to Clatsop Community College on a regular basis.

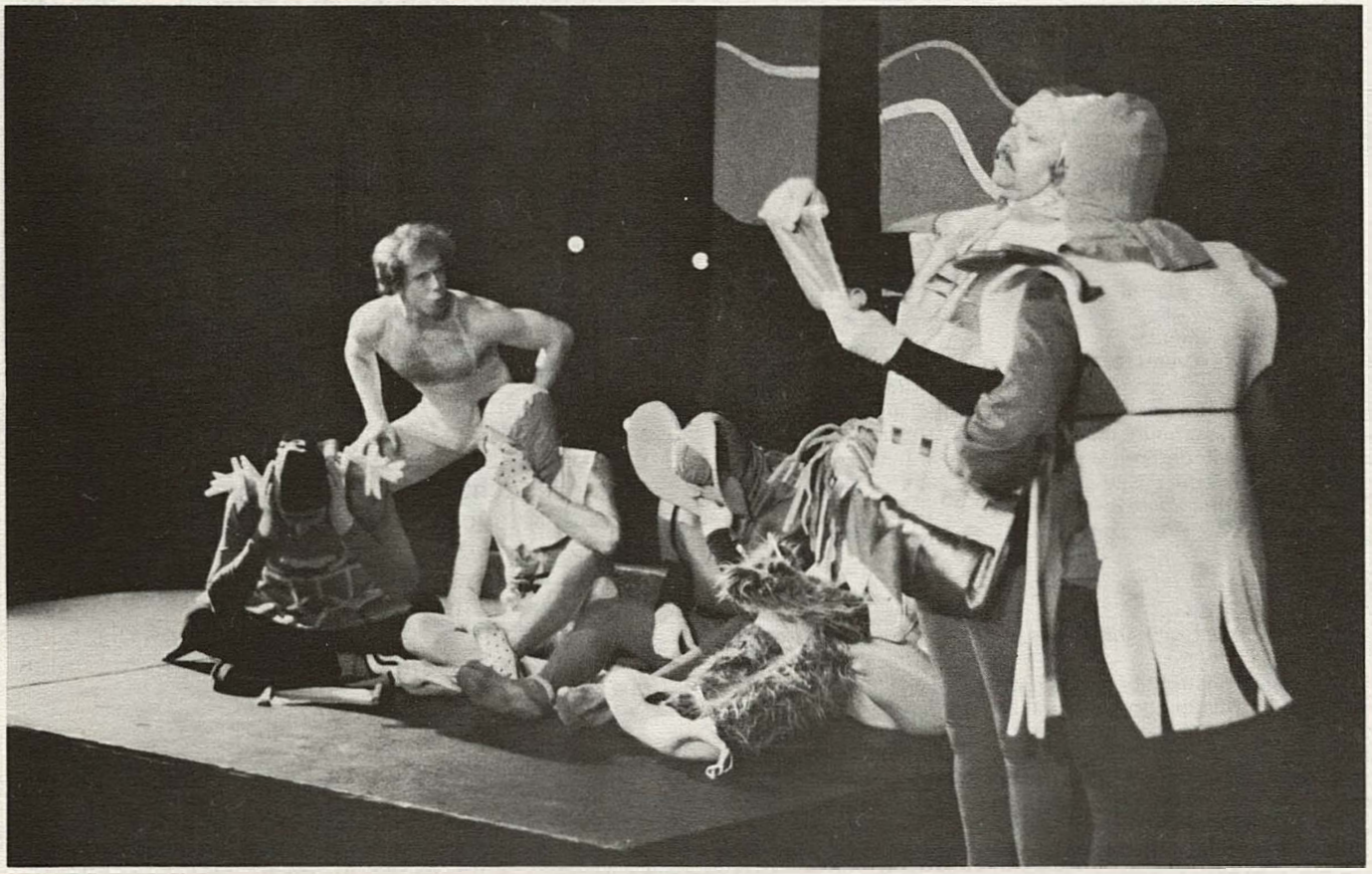
Students in the Clatsop Linfield Bachelor Degree Program are urged to earn an associate degree through Clatsop Community College. and then complete their four-year degree through the Linfield program.

A feature of this program is its orientation toward the working adult. Courses tend to be adjusted to fit work schedules, and through a special process, credit may be earned for learning acquired through life experiences.

For more information regarding this program. contact the Office of Admissions and Records.

DIVISION OF CONTINUING EDUCATION

The Division of Continuing Education was discontinued as a state-wide entity in 1978. Since that time, Oregon State University has offered both upper division and graduate courses at Clatsop Community College. These courses are normally listed in Clatsop Community College's published course schedule each quarter. Information may be obtained directly from Dr. John King (754-2676) OSU-DCE, Continuing Education Building, Corvallis, OR 97331. Locally, information may be obtained by contacting the Office of Admissions and Records at Clatsop Community College.



Academic Information

Degrees, Grades, Academic Standing, Student Records, Registration, Credit by Examination, Credit for Prior Learning, Course Numbering

DEGREES

The College offers three degrees: the Associate in Arts, the Associate in Science, and the Associate in General Studies. Specific information may be found on the following pages: Associate in Arts and Associate in General Studies, pages 10-11. Associate in Science and Associate in General Studies, pages 28-29.

A student may earn more than one degree at Clatsop Community College with the exception that the Associate in General Studies degree may not be awarded concurrent with or subsequent to the Associate in Arts or Associate in Science degrees.

SPECIAL DIPLOMA PROGRAMS

Recognizing the impossibility of anticipating every person's special educational needs and objectives, the College provides for special diploma programs which are individually developed by arrangement through the Office of Career Planning and Employment.

Usually completed in less than two years, such special diploma programs must be planned and approved by the Academic Council before the student involved has completed one and one-half terms of attendance toward that objective.

GRADES— OTHER TRANSCRIPT NOTATIONS

Graded work at Clatsop Community College is based on the following guidelines (grade point value is also indicated):

A-Excellent (4.0)	D-Minimal (1.0)
B-Commendable (3.0)	F-Unacceptable (0.0)
C-Satisfactory (2.0)	

I - Incomplete. At the request of the student, an instructor may award an incomplete if a portion of the course work has been completed and an intent to finish the required work is shown. An instructor will provide the student with a statement describing work needed to complete the course and a copy of such statement will be placed in the student's file.

Aud - Audit. A student who does not wish credit for a course may register for audit. An auditing student is not required to meet the academic requirements of the course. An audit must be initiated by the student. Changing from audit to credit will be treated in the same manner as adding a class.

W - Withdraw. A student - initiated withdrawal.

NC - No credit. No basis for a grade. Student did not complete any work to be evaluated. No credit is earned for the course. Also a designation used for a student who does not do passing work in a Pass-No Credit class.

P - Pass. A student earns credit for a course which is graded on a Pass-No Credit basis.

Notations of P, I, NC, and W are not used in computation of the grade point average.

Courses numbered 0.000-0.999 are normally graded Pass-No Credit. Students may apply a maximum of 24 credits of "pass" grades toward a degree, including a maximum of 15 credits numbered 0.500-0.999 with the exception of 0.745-0.764. All other college courses use the A-F grading system.

Students may retake courses when they believe they may benefit by doing so. However, no additional credits will be allowed for courses in which a passing grade already has been earned except where stated in course descriptions elsewhere in this catalog or as specifically approved by the Academic Council. A course in which a grade of F has been earned may be retaken to earn credit. When courses are retaken, the most recent attempt will be used for GPA computation.

ACADEMIC STANDING

Full-time students at Clatsop Community College are considered to be making "satisfactory progress" toward a course objective who:

1. Enroll in 12 credits or more of approved course work per academic term.

2. Complete satisfactorily no fewer than 12 credits per term.

3. Maintain a cumulative grade average of C or higher.

Each student's transcript lists courses enrolled in at the end of the fourth week of each term. Courses dropped prior to the fifth week are not recorded. Students withdrawing from all enrolled courses are considered not to be making satisfactory progress, except in demonstrated circumstances over which the student has no control.

A student not meeting one or more conditions of satisfactory progress may be placed on academic probation for the subsequent term. In a "Notice of Academic Probation," the student receives information regarding the academic deficiency and specific conditions to be met in order to terminate probation.

Decisions to terminate eligibility to receive financial aid or VA educational benefits because of academic deficiency may be appealed by petition to the Satisfactory Progress Review Board.

STUDENT RECORDS

Students have access to any of their records maintained by the College. Examples of student records are: admissions files, transcripts, and financial data. Confidential files are generated only with the prior consent of the student.

The College may publish and will release directory information. Directory information is defined as student's name, address, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational institution attended by the student, and other similar information.

Students may request the this information not be released in a letter to the Director of Admissions and Records.

REGISTRATION

All students must register in person and should complete registration as early as possible. Registration dates for all academic terms are listed in the academic calendar of the College catalog.

New students who have completed the admission process one month prior to the registration period may expect to receive information on registration from the Director of Admissions. Each new student is assigned a faculty adviser who assists in planning an academic program. It is recommended that the adviser be contacted in advance of registration.

Returning students are expected to register during the announced early registration periods after consulting with their faculty advisers on course programing.

Registration is complete after payment of fees.

A full-time student normally will complete 15 credits each term. Students averaging fewer than 15 credits will need more than six terms to complete degree requirements.

LATE REGISTRATION

A student wishing to register for a class after the second week of the term must obtain written approval from the instructor of the class at the time of registration. Normally, students will be discouraged from entering classes which have been in session two or more weeks. Late registration fees will be applied as outlined on page 8.

CHANGES AFTER REGISTRATION

Students may make course changes at the Office of Admissions and Records. A special form is provided for adding or dropping classes, and for changing from credit to audit or from audit to credit. After the third Friday of the term, a $1 course change fee applies.

The last day of the term to drop a class, or to change from credit to audit, is the Friday immediately before final examination week begins.

WITHDRAWAL

Instructors have the responsibility for warning students whose success is jeopardized by absence and lack of participation.

Students who wish to withdraw completely from the College may do so in the Office of Student Personnel Services. Students are expected to withdraw in person, but under exceptional circumstances may do so by writing letters of explanation to the registrar. Withdrawal after the fourth week of a term is reflected on student transcripts.

AUDITING

Students who do not wish college credit may register for audit. Auditing students are not required to meet specific academic requirements but are expected to participate in their classes. Classes taken for audit require payment of tuition and fees.

CREDIT

Credits are earned on the basis of successful completion of course requirements. The number of credits assigned to each course is usually related to the number of hours spent in class. One credit is earned for each hour of lecture/discussion class attended per week. Laboratory and studio experience usually require three hours of attendance for each credit earned. Most courses have been assigned a definite number of credits per term, but some have been given variable credits. In some variable credit courses, the number of credits earned will be determined by the student's progress during the term.

CREDIT BY EXAMINATION

Students with learning experiences similar to those presented in college courses may earn credits for those courses by successfully completing examinations which allow them to demonstrate their proficiency. Earning credit by examination may be done in either of two ways:

1. By taking examinations developed by members of the College faculty: Permission to take these examinations may be obtained by submitting a petition to the Dean of Instruction. A non-refundable charge of $20 is made for each course challenged by this process. The student will receive a grade of "pass" or "no credit."

2. By successfully completing the College Level Examination Program (CLEP) General Examinations or Subject Examinations: CLEP examinations may be taken at any CLEP testing center. CLEP exams are administered at Clatsop Community College by appointment through the Office of Admissions and Records. The charge for CLEP examinations is $20 for one General Examination and $20 for each Subject Examination.

Additional information about College policies concerning credit by examination may be obtained by writing to the Director of Admissions and Records.

CREDIT FOR PRIOR LEARNING

Students may earn Clatsop Community College credits for learning acquired through job experiences, travel, hobbies, and family and civic responsibilities. Students develop portfolios that document their prior learning after enrolling in a course entitled CPL 120 Credit for Prior Learning (Portfolio Development).

Students may earn up to 45 credits toward the Associate of Arts or Associate of Science Degrees. Credit may be earned for learning equivalent to any approved vocational-technical or transfer course with the exception of cooperative education. Fees depend on the number of credits attempted.

Additional information may be obtained from the Director of Admissions and Records.

COURSE NUMBERING

I. Lower Division Collegiate Courses

A. Courses with alpha-numeric numbers above 100 (e.g., Wr 121) are fully transferable to Oregon four-year colleges and universities.

B. Courses with alpha-numeric numbers from 50 to 99 (e.g., Mth 95) will transfer as elective credit to Oregon four-year colleges and universities.

C. Courses with letters and numbers (alpha-numeric) from 1 to 49 (e.g., Math 10) are not designed for transfer to other colleges and universities within the Oregon State System of Higher Education.

II. Vocational-Technical Courses

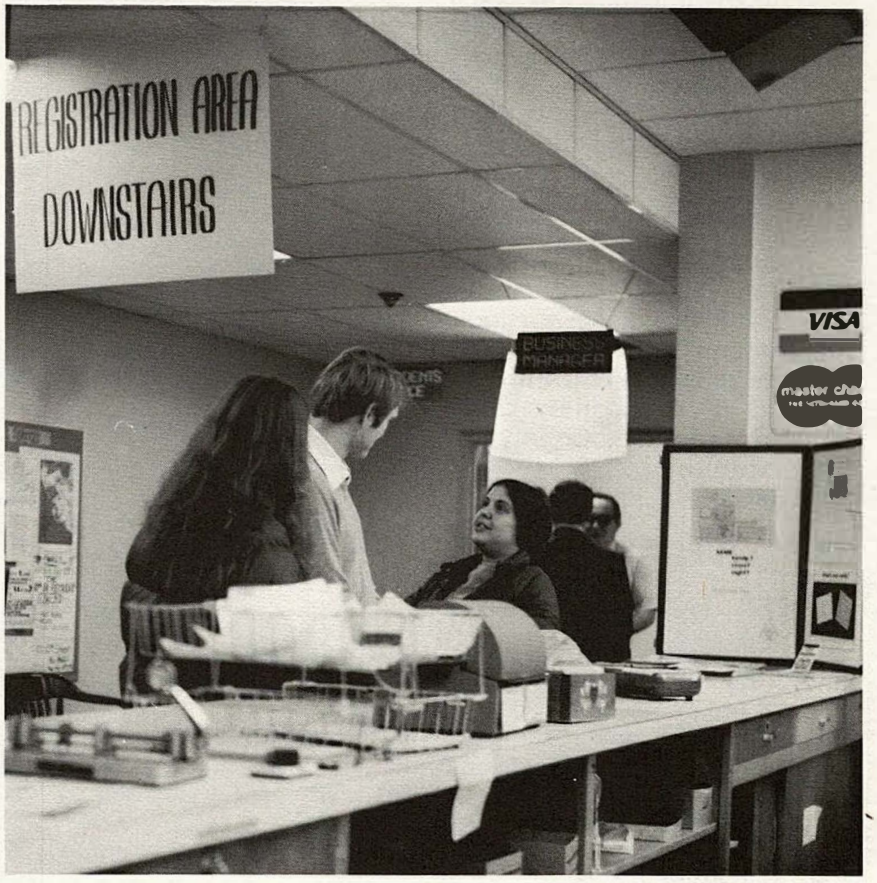
A. Courses with all-decimal numbers from 1.000 to 8.999 are vocational preparatory courses designed to prepare students for particular skills and trades. Although these courses generally do not transfer, some four-year colleges and universities in Oregon occasionally accept these credits. Vocational students anticipating attending a four-year state college or university should consult their adviser regarding limited transferability of specific vocational preparatory courses.

B. Courses with all-decimal numbers from 9.000 to 9.999 are designed for retraining or improvement of occupational skills. They are not intended for general transfer to bachelor's degree programs.

III. Adult and Community Education Courses

A. Courses with all-decimal numbers from 0.000 to 0.499 are hobby and recreation, non-credit classes.

B. Courses with all-decimal numbers from 0.500 to 0.999 are general self-improvement courses which are not designed for transfer to colleges within the Oregon State System of Higher Education.



Student Services

Advising & Counseling, Career Planning & Employment, Financial Aid

ADVISING AND COUNSELING

ACADEMIC ADVISING

All full-time students and degree or diploma candidates are assigned academic advisers who help plan academic programs and term-by-term class schedules. Students are urged to meet with academic advisers regularly to review progress and to plan future courses.

Academic advisers are assigned by the admissions staff when students first declare a major. Subsequent changes in plans or majors usually call for a change of adviser. Such a change may be made at any time upon request by the student.

COUNSELING

Students seeking help in selecting majors, choosing careers or vocations, or dealing with personal difficulties will find appropriate attention through Student Personnel Services. In addition to regular counseling staff, the College engages services of two counseling therapists through the Clatsop County Mental Health Center for students seeking more intensive psychological counseling.

CAREER PLANNING AND EMPLOYMENT

CAREER PLANNING

The Career Planning and Employment Office coordinates vocational interest testing and counseling, conducts classroom instruction in job preparation and search techniques, provides services of the Career Information System computer terminal, and maintains a library of career-related reference materials.

EMPLOYMENT

Staff of the Career Planning and Employment Office offer guidance and employment referrals for career and vocational exploration. Cooperative work experience academic credit is available for program-related job experience and training.

Career Planning and Employment provides job listings, conducts referral services for federal work-study students, coordinates supervised field experience credit, and helps part-time or full-time students gain employment.

For more information regarding cooperative work experience, please refer to page 29.

PLACEMENT

Placement services are available without charge to students, graduates and alumni of the College.

FINANCIAL AID

GENERAL INFORMATION

The College coordinates a broad program of scholarships, grants, loans, full-time and part-time employment from its own resources, state and federal agencies, and other sources. As a result, approximately 65 percent of the students receive aid in meeting their living expenses and college costs. Over 95 percent of the students who apply for and need financial aid are awarded the assistance they need.

APPLICATION AND ELIGIBILITY

Amounts of financial aid range from $100 to several thousands of dollars. The amount for each student depends on need, which is determined through use of the Financial Aid Form (FAF). This form was devised by the College Scholarship Service and is available from high school guidance offices and at the College Financial Aid office. It is the only application necessary. Applicants should complete the form and send it to College Scholarship Service as soon as possible so that it may be duplicated and the copies sent to the College, Basic Grant Processing Center and Oregon State Scholarship Commission.

Decisions on applications are made after May 1, or as applications are received after that date. Early application is advised.

All of the financial factors of an applicant or applicant's family are taken into consideration in determining the amount of need. However, gross income and the number of people in the family are most important. An applicant from a family with two children and an income of $20-25,000 is usually eligible for some financial aid at the College. Students who have not lived with their parents for two years or more usually are considered for financial aid regardless of their parents' income.

TYPES OF AID

Financial aid may be awarded in the form of grants and scholarships, the opportunity to take out a loan, the eligibility for part-time employment, or a combination of the three. Most students receiving financial aid will be awarded a combination of grant, loan and work-study assistance.

The financial need of all recipients is reviewed each year. Parents and/or student must fill out a new Financial Aid Form and submit it to the College Scholarship Service annually. Financial aid awards are usually revised when family or stu-

dent financial circumstances change. Students may apply for financial aid at any time during their stay in college; it is not necessary to be in need when you first come to college in order to qualify.

Complete information about grant, loan and work-study aid, as well as other aspects of the financial aid program, is available in a handy fact sheet guide published by the Financial Aid Office.

SATISFACTORY PROGRESS

Students receiving financial aid from the College are expected to make normal progress toward their degree or other academic objective. That is, they are expected to graduate after a maximum of eight terms of college work. The Financial Aid Office reviews academic performance each term. Students who do not meet the standard of satisfactory progress are placed on academic probation. If their performance does not improve, financial aid may be discontinued. Every attempt is made to provide students with counseling help and other assistance as needed to maintain satisfactory progress.

SCHOLARSHIPS

Board Scholarships. The Clatsop Community College Board of Directors awards several full-tuition merit scholarships each year to students graduating from high schools in the College District or service area.

Foundation Scholarships. Clatsop Community College Foundation, a private corporation, awards a number of full-time, in-district resident tuition grants each term. Selection is based on academic achievement and goals. Applications are available in the Financial Aid Office.

Private Scholarships. A limited number of private scholarships in specified areas of study are awarded each year. Specific information may be obtained in the Financial Aid Office.

Scholarships are available from such sources as the Arthur Fertig Memorial Fund, P.E.O. Sisterhood, Astoria Regatta Association, and the Rotary Club of Astoria. Other scholarship funds include the Clatsop Community College Memorial Fund and the Merriam Shawa Scholarship Fund.

College Scholarship Committee. The scholarship committee is comprised of faculty and staff of the College. The committee chooses individual recipients for such private awards as the Arthur Fertig Memorial Scholarship Grant. Chairman is the Dean of Students.

LOANS

Student loans are available through the Guaranteed Student Loan program. Students first apply to the College for approval. They may borrow up to $3,000 per year from their local bank, savings and loan company or credit union. Loans are guaranteed by the government, which pays the interest while the student is in college. Six months after graduating or leaving college, student borrowers begin repayment of the principal—plus nine percent simple interest—in monthly installments. Postponement of principal payments and extensions of the interest subsidy are available to those who enter military service, VISTA, Peace Corps, or graduate school. Some banks require families of student borrowers to be bank customers, and some will not lend for first-year students. Check with your local bank for details.

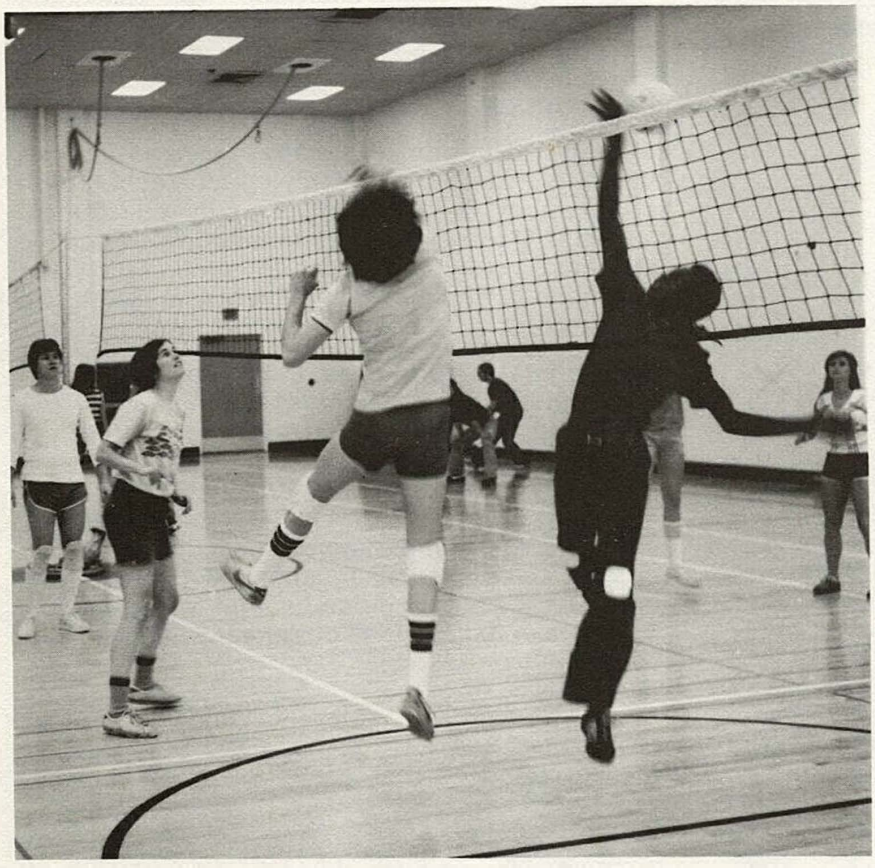
The Associated Student Body, Inc., maintains an emergency loan fund through the Financial Aid Office. Students may borrow up to $50 at a time, payable within the term, at no interest.

A student Book Loan Fund, administered by the Financial Aid Office, provides short-term loans for textbooks and essential classroom supplies. There is a small service charge.

VETERANS SERVICES

The Office of Veterans Services assists veterans and others in applying for Veterans Administration or State of Oregon educational benefits. Counseling and information services are available. Veterans planning to enroll are advised to apply for educational benefits at least two months before first registering for classes.

Satisfactory Progress. In accordance with requirements of the Veterans Administration and College policies, students receiving educational benefits from the Veterans Administration are expected to make normal progress toward a degree or other academic goal. Continued eligibility for certification to the Veterans Administration is contingent upon each student's meeting the standard of satisfactory progress. Full information is available from the Office of Veterans Services.



Library, Student Center, Summer Term, Child Care, Organizations & Activities, Intramurals, Honors & Awards, Students Rights & Responsibilities

DORA BADOLLET LIBRARY

The Library is located in the center of the campus. It houses a collection of approximately 31,000 volumes, related to all aspects of the curriculum. About seven hundred periodicals and newspapers are currently received. Microfilm and microfiche backfiles are maintained for the more important publications, including The New York Times, held from 1950. The Library collection is rounded out by various films, tapes, records and slides.

Comfortable study carrels provide an atmosphere conducive both to study and recreational reading. Picture windows afford a magnificent view of the Columbia River and the Washington shore. Small seminar rooms are available for group study or listening to recordings.

STUDENT CENTER

The campus bookstore and cafeteria are located in the Student Center, first floor of Patriot Hall, adjacent to the recreation area. The cafeteria serves meals and snacks throughout the day and light snacks, supplemented by vending machines, during the evening hours.

Lockers for student use, purchased by ASBI, are located throughout the main campus. Consult the ASBI directors in the Student Center or staff of Student Personnel Services for information.

SUMMER TERM

Two five-week sessions for summer study extend from June 22 to July 24 and from July 27 to August 28, 1981. Some courses may run for the full 10 weeks. Requests for specific classes should be made to the Adult and Community Education Office by letter, telephone, or in person.

Lower division transfer and various vocational-technical courses are offered. Students may choose to take only one or two classes or to carry a full-time load. Entrance requirements are satisfied by the completion of registration procedures and the ability to do the work.

Summer term lower division transfer courses normally include: English Composition, Literature, Typing, Shorthand, History of Western Civilization, U.S. History, Business Machines, Anthropology, Accounting, Intermediate and College Algebra, Economics, Trigonometry, Calculus, Psychology, Sociology, Ceramics, Design, Drawing, Painting, Piano, Jewelry and Metalsmithing, Speech, Theatre, Personal Health, Physical Education, Physical Science.

Summer term schedules are available late spring term and will be mailed upon request from the Office of Admissions and Records.

JOSIE PEPER CHILD CARE CENTER

The Josie Peper Child Care Center is a state and federally licensed facility. Competent, certified day care for children between the ages of three and six years is available in the College-owned Center, east of the Performing Arts Center, on Franklin Avenue. The Center is open between 7:30 a.m. and 5:15 p.m., weekdays, when the College is in session. For specific information regarding eligibility, services and child care fees, parents are invited to visit the Center during hours of operation.

The center provides free lunches and two nourishing snacks daily. The Center's learning environment is enhanced by the energy and attention of supervised practicum workers from the College's Early Childhood Education vocational program.

ORGANIZATIONS AND ACTIVITIES

The College realizes that out-of-class activities have as important an educational potential as traditional course work. A variety of opportunities for recreation, social contact, and entertainment is available to the interested student.

Among clubs and organizations available to students with specific interests are student government (the Associated Student Body, Incorporated--ASBI), International Students Club, Arts Unlimited (music and drama), Highliners (commercial fishing), C-3 Cattle Company (dairy and livestock), Timber Techs (forestry), Northwest Columbia Fencers Club and Veterans Club. Students with a special interest in common are invited to form a club and to seek ASBI approval as a recognized student organization. Such approval grants student clubs certain rights and privileges, including appropriation of student body funds and use of College facilities.

"Common Sense" is the ASBI-sponsored student newspaper, appearing periodically during the academic year. A student literary and visual arts magazine, "Rain", is published annually.

The ASBI has provided students with a variety of recreation and entertainment options in the Student Center. Table tennis, foosball, billiards, music, TV, and an on-campus radio station are available during school hours.

INTRAMURAL ATHLETICS

The College believes that student participation in a quality intramural athletic program is of high educational value. Important, too, is a program equally available to men and women. The intramural program, open to all students of the College, includes basketball, volleyball, badminton, golf, tennis, and table tennis.

HONORS AND AWARDS

Students at Clatsop Community College receive recognition for scholarship and distinctive service. Honors and awards include the following:

Honor Roll
Dean's List
Athletic Awards
Department Awards
Award of Highest Scholarship
Student Body President's Cup
College President's Cup
Student Body Plaque

STUDENT RIGHTS AND RESPONSIBILITIES

The College publishes a student handbook containing full information regarding the rights and responsibilities of students, student code of conduct and disciplinary procedures, policies governing privacy and disclosure of student records, and other information deemed necessary for the benefit of students. The handbook also contains the constitution and by-laws of the Associated Student Body, Inc. For information and a copy of the handbook, inquire at the Office of Student Personnel Services.

GRIEVANCES

Procedures exist for resolving differences and conflicts in the event that a student feels unfairly or improperly treated by another member of the College community, whether student, faculty or staff. A complete description of grievance procedures is contained in the "Student Handbook" and in the "Handbook of Board Policies and College Procedures." Consultation services are available at the Office of Student Personnel Services.

Full-time Faculty & Administration

Index, Campus Maps

(Year denotes initial full-time service at Clatsop Community College.)

ANUGITA, MA PREM; 1977 — **INSTRUCTOR, DANCE**
A.A., College of San Mateo; B.A., San Diego State University; M.A., University of Oregon

BAINER, PHILIP; 1963 — **PRESIDENT**
B.A., Ottawa University; M.S., Kansas State Teachers College

BARNUM, PAUL; 1977 — **DIRECTOR, PUBLIC INFORMATION**
B.A., M.A., University of Oregon

BATCHELDER, ALAN; 1976 — **DEAN OF STUDENTS**
B.A., Simpson College; M.A., Claremont Graduate School

BERENS, MELVYN; 1966 — **INSTRUCTOR, HISTORY & SOCIAL SCIENCE**
B.A., M.A., Pacific University

BROWN, JACK; 1960 — **INSTRUCTOR, PHYSICAL EDUCATION**
B.A., M.Ed., Linfield College

BRULAND, MAGDALENE; 1967 — **ASSISTANT LIBRARIAN, CATALOGING**
B.A., Luther College; M.L.S., University of Michigan

CAMPBELL, WILLIAM; 1971 — **INSTRUCTOR, DATA PROCESSING**
B.S., Minot State College, University of North Dakota; M.Ed., University of Montana

CHRISTIE, JOHN; 1971 — **INSTRUCTOR, FORESTRY**
B.S., Yale University; B.F., Oregon State University

CLUNE, JAMES; 1979 — **INSTRUCTOR, BUSINESS ADMINISTRATION**
B.S., U.S. Coast Guard Academy, M.S., Purdue University

COLLMAN, RONALD; 1967 — **ASSISTANT DEAN OF INSTRUCTION DIRECTOR, ADULT AND COMMUNITY EDUCATION DIVISION**
B.S., Pacific University, M.Ed., Oregon State University

DAVIS, ERNEST; 1967 — **INSTRUCTOR, FORESTRY & ENGINEERING**
B.S., M.S., Oregon State University

DOEHLE, ANNA: 1978 — **ASSISTANT LIBRARIAN, MEDIA**
B.S., Portland State University; M.L.S., University of Oregon

DOTY, GILBERT; 1979 — **INSTRUCTOR, ELECTRONICS**
A.A. Electronics Systems Technology; Twenty-two years' electronics experience

DuBOIS, EDWARD; 1966 — **INSTRUCTOR, PHYSICAL SCIENCE AND PHYSICS**
B.S., M.S., Oklahoma State University

ELLSBERG, PATRICK; 1979 — **INSTRUCTOR, BUSINESS ADMINISTRATION**
A.A., College of Marin; B.S., Chico State; M.B.A., University of California

ELLSBERG, ROBERT; 1977 — **DIRECTOR, VOCATIONAL IN-SERVICE PROGRAMS**
B.A., University of California; M.A., California State

ERICKSON, ROBERT: 1974 — **BUSINESS MANAGER**
B.S., Oregon State University

FAIRFIELD, LORRAINE: 1973 — **INSTRUCTOR, SECRETARIAL SCIENCE**
B.A., M.Ed., Western Washington State College

FISHER, DON; 1972 — **INSTRUCTOR, AUTOMOTIVE**
A.T., B.T., Oregon Institute of Technology

FLICKINGER, JOE: 1975 — **INSTRUCTOR, OPERATOR, TELEVISION STUDIO**
B.A., Kalamazoo College; Diploma, Cleveland Institute of Electronics; M.A., University of Southern California

GABRIEL, MARY; 1967 — **AFFIRMATIVE ACTION OFFICER; INSTRUCTOR, HEALTH & FIRST AID**
B.A., Berea College; M.Ed., Oregon State University

GANN, ALLAN; 1980 — **INSTRUCTOR, COMMERCIAL FISHING**
A.A., Oceanside-Carlsbad Junior College
Fourteen years'commercial fishing experience

GARRISON, ROY; 1969 — **INSTRUCTOR, ART**
B.S., M.A., Brigham Young University

HARRISON, BRIAN; 1978 — **INSTRUCTOR, ANTHROPOLOGY & SOCIOLOGY**
B.A., M.A., Gonzaga University

HASKELL, LARRY; 1971 — **ASSISTANT DIRECTOR, ADULT AND COMMUNITY EDUCATION DIVISION**
B.S., Oregon College of Education

HATFIELD, LYNDA; 1979 — **CHILD CARE CENTER MANAGER; INSTRUCTOR, EARLY CHILDHOOD EDUCATION**
A.A., Lane Community College; B.S., Oregon State University

HAUSER, JOHN; 1972 — **INSTRUCTOR, HISTORY AND PHILOSOPHY**
B.A. Miami University; Ph.D., Washington State University

HAWKS, BEVERLY; 1967 — **DIRECTOR, ACCOUNTING SERVICES**
Thirty-one years' business experience

HOGAN, JAMES; 1975 — **DIRECTOR, ADMISSIONS AND RECORDS**
B.A., University of Redlands; M.B.A., University of Oregon

HOLMSTEDT, JOHN; 1964 — **ASSISTANT TO THE DIRECTOR, VOCATIONAL-TECHNICAL EDUCATION; INSTRUCTOR, BUSINESS EDUCATION**
B.S., Midland College; M.Ed., Oregon State University

ITZEN, EUGENE; 1971 — **DIRECTOR, CAREER PLANNING AND EMPLOYMENT; VOCATIONAL COUNSELOR**
B.S., M.S., Oregon State University

KILLION, PATRICK; 1972 — **INSTRUCTOR, MARITIME SCIENCE**
B.S., Oregon College of Education

KLINGER, ANNE; 1979 — **INSTRUCTOR, PHYSICAL EDUCATION**
B.S., Central Michigan University; M.A., University of California

KOEHMSTEDT, MARIA; 1977 — **ASSISTANT LIBRARIAN, PERIODICALS**
B.A., North Dakota State University; M.L.S., University of Washington

KRUGER, J. DAVID; 1973 — **INSTRUCTOR, CHEMISTRY**
B.S., Harvey Mudd College; Ph.D., University of Washington

LITTELL, NANCY; 1979 — **ABE, AHSC COUNSELOR/COORDINATOR**
B.A., Portland State University

LOWER, BRUCE; 1967 — **DIRECTOR, FINANCIAL AID; COUNSELOR**
B.A., Eastern Washington State College

McCARTER, MARGARET; 1966 — **INSTRUCTOR, BIOLOGY**
A.A. Phoenix Junior College: B.S.. Iowa State University; M.S., Oregon State University

MUEHLBERG, GARY; 1972 — **INSTRUCTOR, OCEANOGRAPHY**
B.A., San Diego State College; M.S., Oregon State University

NEBEKER, ROYAL; 1974 — **INSTRUCTOR, ART**
B.A., M.F.A., Brigham Young University

NEGHERBON, RICHARD: 1979 — **INSTRUCTOR, MACHINE TOOLS**
Twenty-six years' industrial experience

OLDENKAMP, LINDA: 1976 — **DIRECTOR, DEVELOPMENTAL PROGRAMS**
B.S., Northwest Nazarene; M.Ed., Oregon State University

PAUL, ELRESA: 1971 — **INSTRUCTOR, DEVELOPMENTAL LABORATORY**
B.A., Kansas State Teachers College

PERKINS, DALE; 1975 — **INSTRUCTOR, MARINE ENGINEERING**
B.T., Oregon Institute of Technology

PHILLIPS, BETTY; 1979 — **INSTRUCTOR, MUSIC**
B.M., Marylhurst Education Center.
Fifteen years' professional music experience

PHILLIPS, DAVID; 1972 — **ASSISTANT DEAN OF INSTRUCTION; DIRECTOR, VOCATIONAL-TECHNICAL DIVISION**
B.S., Humboldt State University; M.F., Oregon State University

PHILLIPS, GEORGE; 1968 — **INSTRUCTOR, BUSINESS ADMINISTRATION AND ECONOMICS**
B.S., Upsala College; M.B.A., Gonzaga University

REED, G. EDWARD; 1976 — **INSTRUCTOR, WELDING**
A.A., Ventura College; Fourteen years' industrial experience

RICHARDSON, SUSAN; 1979 — **INSTRUCTOR, MATHEMATICS**
B.S., University of Portland, M.A., Portland State University

ROBERTS, BOYD; 1972 — **INSTRUCTOR, CRIMINAL JUSTICE**
A.S., Treasure Valley Community College; B.A., Southern Oregon State College; M.A., Washington State University

RUPP, JOHN; 1969 — **INSTRUCTOR, ENGLISH AND LITERATURE**
B.A., Portland State University; M.A., University of Portland

SATTERWHITE, FRANK; 1980 — **INSTRUCTOR, PSYCHOLOGY AND FAMILY LIVING**
B.A., Seattle Pacific University; M.E., Ph.D., University of Washington

SCALLAN, DONALD; 1969 — **INSTRUCTOR, SPEECH**
B.S., M.S., Pacific University

SCHULTZ, ALFRED; 1967 — **INSTRUCTOR, WELDING**
B.S., Oregon State University
Thirty-one years' welding experience

SEE, PAUL: 1967 — **DEAN OF INSTRUCTION; INSTRUCTOR, GEOLOGY**
B.S., Oregon State University; M.S., Portland State University

SHANNON, ELLEN; 1965 — **INSTRUCTOR, ENGLISH AND LITERATURE**
A.B., University of Illinois; M.A., University of Delaware

SQUIRES, RICHARD; 1975 — **INSTRUCTOR, DRAFTING**
B.S., Columbia University; B.A., Pratt Institute
M.Ed., Oregon State University

STANGEL, DONALD; 1975 — **INSTRUCTOR, LIVESTOCK**
B.S., M.S., Oregon State University

STEVENS, MILFORD; 1969 — **INSTRUCTOR, MATHEMATICS**
B.S., University of Minnesota; M.S., Illinois Institute of Technology

STOLTZ, JAMES; 1976 — **DIRECTOR, LIBRARY SERVICES**
A.B.A.B.Ed., Peru State; M.A., University of Washington

STUCKI, REED; 1978 — **FARM MANAGER: INSTRUCTOR, DAIRY**
A.S., Ricks College; B.S., Utah State College

SWENSON, GERALDINE; 1965 — **INSTRUCTOR, MATHEMATICS**
A.A., Bay City Junior College; B.S., M.A., Central Michigan

TEMPLE, KARIN; 1978 — **INSTRUCTOR, FOREIGN LANGUAGES**
B.A., Albert-Ludwigs University; M.A., Ruhr University

THOMAS, SHIRLEY; 1979 — **INSTRUCTOR, ENGLISH & WRITING**
B.A., St. Olaf College; M.S., University of Wisconsin; Ph.D., Washington State University

TURNER, REED; 1978 — **INSTRUCTOR, THEATER**
B.S., Southern Utah State College, M.A. Brigham Young University

VAUGHN, ARTHUR; 1969 — **INSTRUCTOR, MUSIC**
B.S., M.A., University of Nevada; Ph.D., Oregon State University

WANLASS, STANLEY; 1971 — **INSTRUCTOR, ART**
B.F.A., M.A., Brigham Young University

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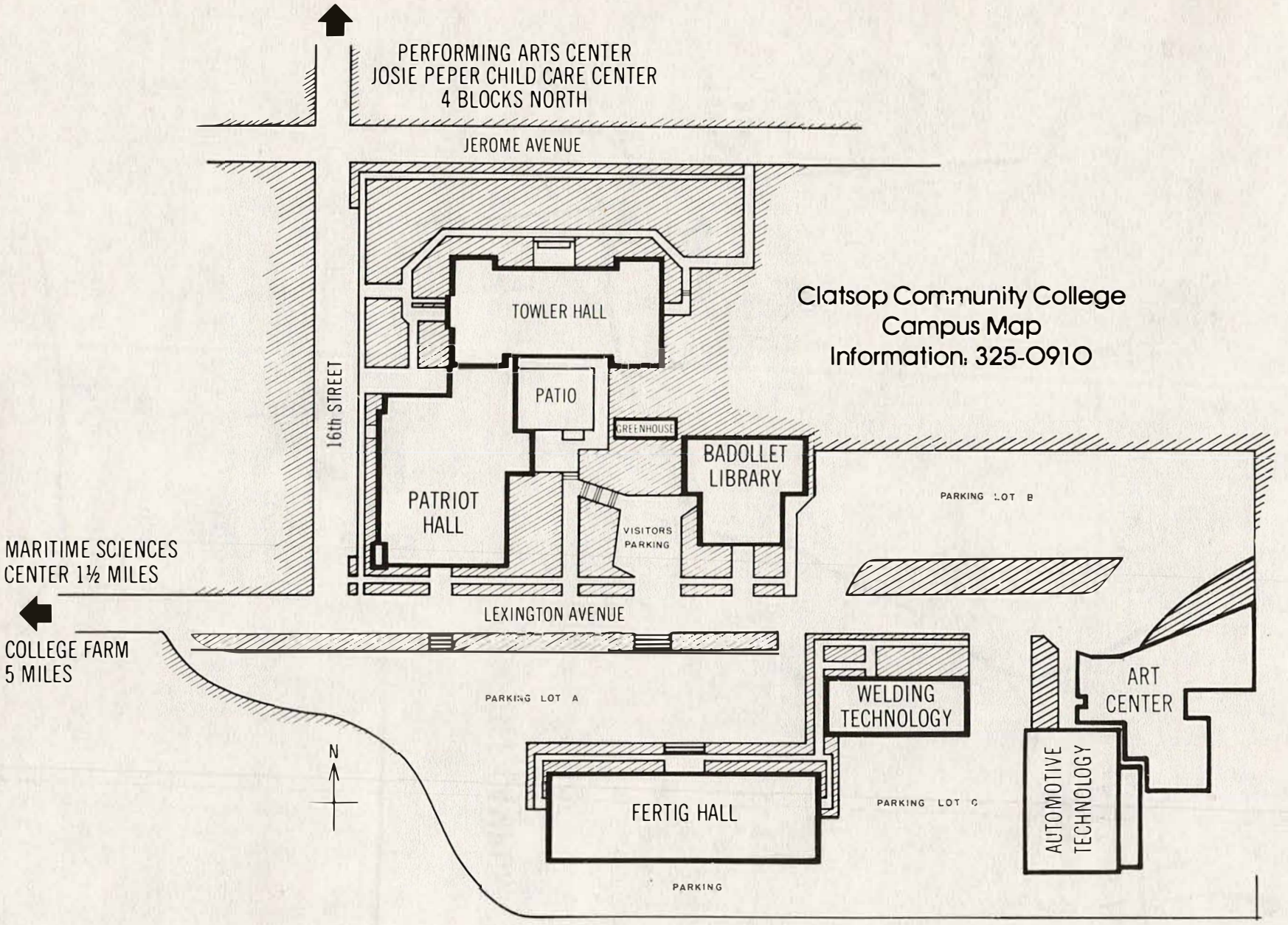
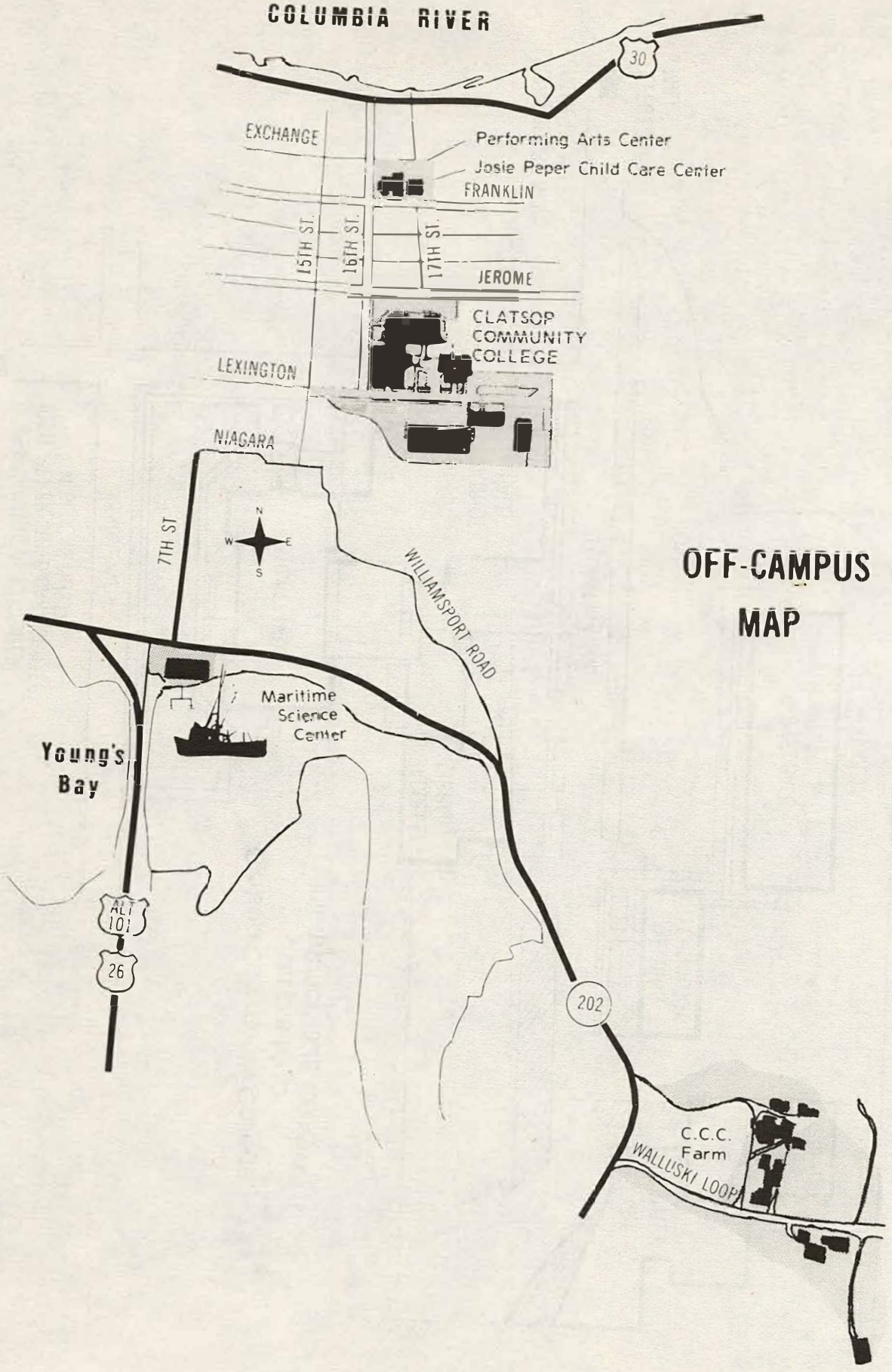


Clatsop Community College
Campus Map
Information: 325-0910



OFF-CAMPUS MAP